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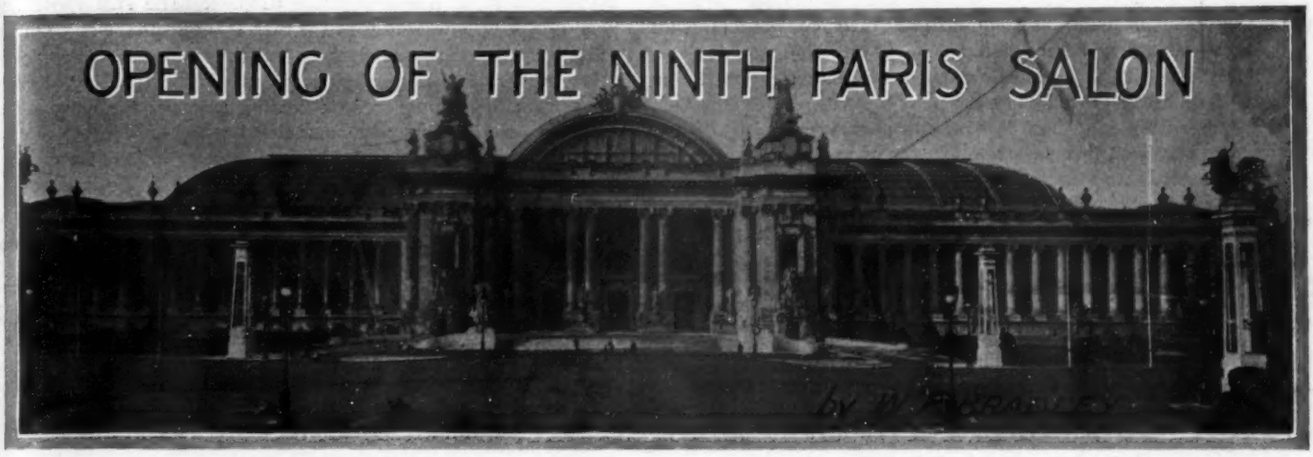


PARIS, Dec. 9.—Under the direction of President Fallières, accompanied by a special committee of Cabinet officers, the ninth annual automobile show in the Grand Palais was formally declared open yesterday morning. The President arrived at the Grand Palais shortly after 10 o'clock in a Panhard car, and it was generally commented upon that for the first time since the automobile show became one of the established annual affairs of the French capital, he has availed himself of this modern form of conveyance. In accordance with his custom, President Fallières honored several of the stands with a personal inspection, but, contrary to his precedent in limiting the number, this year he practically made the rounds, the following list representing but a part of those that were honored with a visit: Gillet, Forest, Gobron-Brillé, Krieger, Gregoire, Boyer, Eugene Brillé, Milde Niclausse, Gallia, Renault, Electromotion, Panhard, Darracq, Serpollet, Westinghouse, Unic, Hurtu, Hotchkiss, De Dion-Bouton, De Dietrich, La Buire, Cottereat, Furor (bicycles) Contal, C. G. V., Delaunay Belleville, Peugeot, Mercedes, Brasier, Rochet (bicycles) Michelin (tires) Falconet, Perrodeau (tires), Martini, L'Automatique (tires), Dunlop (tires).

So far as novelty is concerned the scene is but a repetition of that of last year and the year before, and but for slight alterations in the decorations and illumination one might easily imagine that the automobile show had been running steadily during that time. The cars, the decorations, the place, the President's visit, with its close but rapid scrutiny of the showing of a number of the stands, followed by the customary presentation of decorations to a number of the exhibitors on leaving the building—all these appear to constitute the component parts of the same act of a play that is repeated on the same stage year after year with scarcely a new line or novel piece of stage business to enliven it, for the makers themselves are compelled to admit that for the time being at least they have reached the end of their tether and that the day of springing an important innovation in design or construction on the automobile world at every show is something of the past. Novelties of sufficient merit to warrant their uncovering under the ægis of a well-known and solidly-established name have become so few and far between that the majority of makers have given up the search for them.

Industry Has Arrived at Fixed Stage

It is not to be understood from this that they have given up all hope of ever being able to present anything startlingly new in the way of improvements, but the industry as a whole has arrived at a stage where constant striving to produce such things as an annual surprise is no longer profitable. In fact, things have settled down to such an extent that the custom of going to great expense to design a novel and elaborately decorated setting for the cars each year has been generally abandoned. Last year's decorations were carefully stored like so many theatrical properties and merely dusted off and touched up here and there to again ornament this year's show. For this reason it is not at all difficult for the visitor to close his eyes and imagine that he visited last year's show yesterday, and that but a night has intervened between his going and coming.

To revert to the vernacular and make use of one or two expressive if inelegant Americanisms, the French manufacturer has been exceedingly "hard put to it" to bring out something new this year, and, failing everything else, has "fallen to" the six-cylinder idea. Indeed, this is a six-cylinder year, for not in sporadic or scattering instances has the multiplication of

It Is a Six-Cylinder Year.

cylinders been adopted as a feature, but so generally that it

may safely be said that fully 75 per cent of the makers are showing a six-cylinder model for stock production during the coming season. The French industry as a whole still clings tenaciously to the idea that the high-priced, high-powered car, on which absolutely nothing that ingenuity can suggest and skill evolve in the way of speed and comfort, forms the backbone of the business, and will continue to do so. Hence the average French designer was only too ready to adopt anything that would provide an opportunity for the production of higher-priced cars than ever, and the six-cylinder idea readily lent itself to his purposes. They are impressive in appearance, smooth, and very silent in action, and costly in price—the three attributes that form the *sine qua non* of the French maker's ideal.

Of course there is another side to the six-cylinder question as well. England has boomed it, claiming it as her very own, and the success which has met the six-cylinder campaign in the "tight little isle" has made the builders on this side of the channel uneasy. Accordingly, some of them have produced six-cylinder cars in order to compete with the Briton in their most profitable stamping ground—England proper; others have brought out six-cylinder models simply because their competitors were doing so, and they regarded it as the proper thing to do likewise, while still others have followed suit in order not to be accused of being behind the times.

In other words, it has become the paramount issue of the moment, and like other paramount issues of unlamented memory, it is not regarded merely as the addition of another balanced couple to the motor, thus making its impulses practically continuous when running at normal speed, but is thought of and talked of as if it were some entirely new and startlingly novel means of creating power à la Keeley motor, or as if it had grown overnight and was something never before heard of. It is the Messiah of the automobile world that is to remedy all the ills that the automobile was ever heir to, and, to judge from popular opinion, it is going to sweep them away as if with a magic wand. Naturally, those makers who have not been influenced by the movement deprecate the tendency "to burden the engine with 50 per cent. additional complication" for which there is no compensating feature other than smoother running, and decry it as a mere fad, prophesying that it will be forgotten by the time another show rolls round.

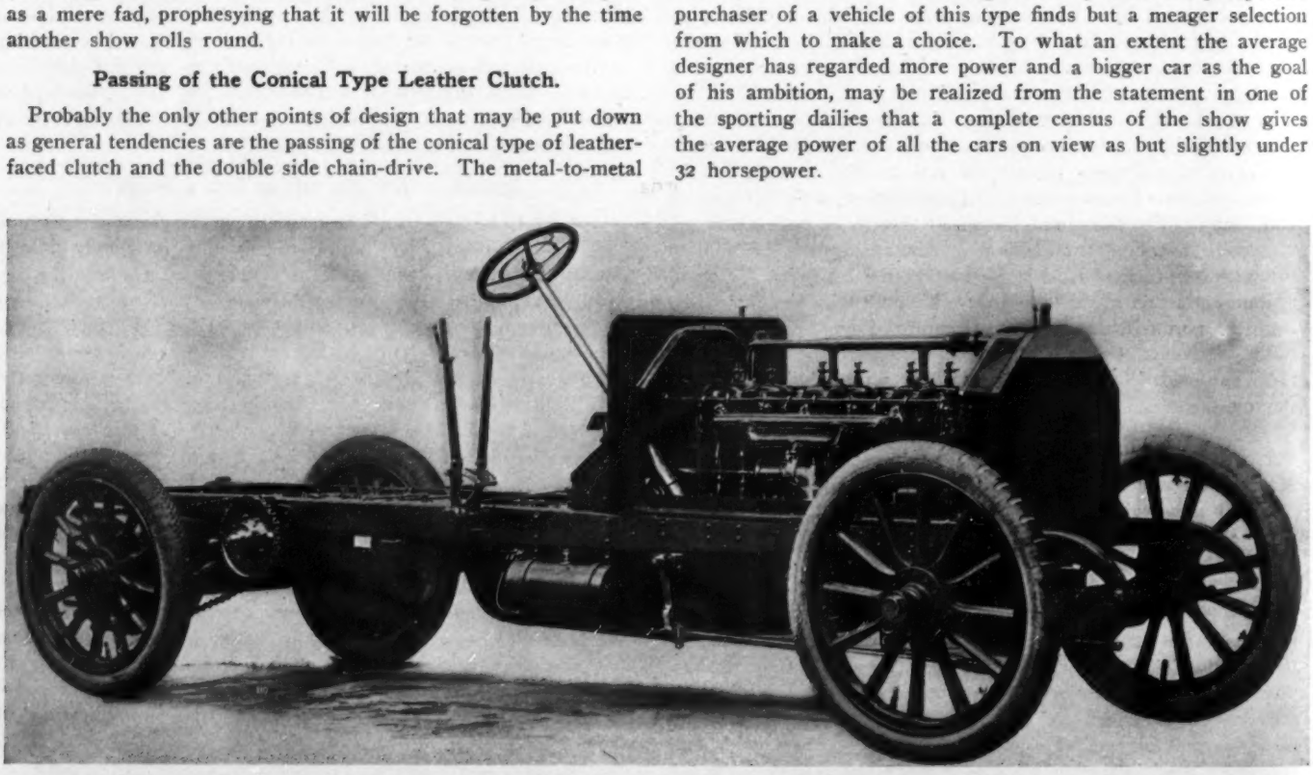
Passing of the Conical Type Leather Clutch.

Probably the only other points of design that may be put down as general tendencies are the passing of the conical type of leather-faced clutch and the double side chain-drive. The metal-to-metal clutch usually embodied in the form of two groups of discs, varying in number with different makers, but generally with an almost infinitesimal clearance and always running in an oil bath, has been a long time in taking hold, but, as is frequently the case, its persistence has suddenly been rewarded with an almost general success. The important exceptions who have adhered to the old conical form are now practically as few in number as were the advocates of the metallic disc clutch a few years ago—during that time things have been reversed.

The cardan shaft type of drive is still, however, in an earlier stage of the transition process. The double side chain-drive has been a hallmark of the French high-powered car for so long that it is clung to tenaciously and dies hard. But the whirring, rattling progress of the side-chain-driven car, as compared with its shaft-driven competitor, has become so obvious that one by one there are defections from one rank and additions to the other. The change is gradual, but there is no doubt of its existence, and its results will undoubtedly be far more marked a year hence than they are to-day. It is due in large part to improvements in the system of live axle drive adopted. The stiff unyielding type in which the weight upon the rear axle affects the angle of the propeller shaft is now largely in the minority. Practically every maker who is turning out cars of this type has devised some form of floating or semi-floating axle for the drive. The growth of the idea may be appreciated when it is stated that of all the cars at the show probably the advocates of both systems are about equally divided, the difference, if any, being in favor of the live axle type rather than the side chain.

French Maker Cares Not for Popular Car.

As already intimated in dealing with the six-cylinder idea the French maker still fights shy of the low-priced car. He will have none of it if he can avoid it, which is equivalent to saying that there will be no great number of additions to the voiturette class until the builders of high-priced cars find that their field has been narrowed to an extent where they must look elsewhere if they would survive. Then, and not before then, will the French maker take kindly to the small car, not because he would but because he must. As things are at present the prospective purchaser of a vehicle of this type finds but a meager selection from which to make a choice. To what an extent the average designer has regarded more power and a bigger car as the goal of his ambition, may be realized from the statement in one of the sporting dailies that a complete census of the show gives the average power of all the cars on view as but slightly under 32 horsepower.



THE 1907 60-HORSEPOWER SIX-CYLINDER FIAT EQUIPPED WITH SELF STARTER AND SHOWN FOR FIRST TIME AT PARIS SALON.

FRENCH AND AMERICAN MODELS AT OLYMPIA

By JOSEPH A. MACKLE.

LONDON, Dec. 1—The interest and expectation with which the appearance of the new French models at the Salon in December has hitherto been heralded will in future be less in evidence, and in this respect, apart from financial considerations, the earlier holding of the British show must undoubtedly affect the exhibition of Paris. Every Continental maker of note displays his latest productions, and the efforts made to attract the British purchaser lend much support to the belief that this country is still the leading automobile market of the world. The general impression conveyed by these foreign exhibits is the finality in design which appears to have been reached in the principal components of the car. Detail improvements are naturally in evidence to a certain degree, but save for this, the 1907 leading models are but little changed from those of the past season.

A few new types have been introduced; many firms of note stage a six-cylinder model, of average horsepower about 40, but it is questionable whether half of these will be ever seen again or will not share the fate of the much-talked-of six-cylinder Panhard of the last show, which quickly faded into oblivion. Still the boom in "sixes" is of interest as indicating the extent to which fashion sways even the automobile world, and the general adoption of a type of engine which a British firm can (and loudly does) claim to have originated is quite a possibility for that class of automobile in which increased smoothness of running is of greater importance than cost price.

The live axle slowly but surely grows in favor, and the noisy side chains are within measurable distance of ultimate extinction. The disk clutch has also gained greatly in popularity, and this detail of Italian practice is spreading to a great degree. Engine design does not seem likely to settle down finally as yet, but there is a growing tendency toward the casting of cylinders in pairs and the placing of all valves on one side. High-tension magneto is frequently replacing the low-tension variety with internal make-and-break, and a supplementary battery and coil ignition having a separate set of sparking plugs is standard in many cases. Much attention has been paid to lubrication, and forced oil circulation by pump replaces the old haphazard splash system.

The day of the "gearless" car has not yet arrived, and four speeds, with gate control, are to be found even on high-powered six-cylinder models. The general adoption of ball bearings throughout the transmission is an interesting feature, but for the engine plain bearings are found satisfactory. So much for the mechanical tendencies; the comfort of both driver and passengers is receiving no less attention. The springing has been carefully considered, and longer springs with shock absorbers are found. Rear transverse springs are met with frequently, and the wheelbase shows a tendency to be shortened somewhat. All control levers are thoughtfully placed in readily accessible positions, and the vogue of the mechanical lubricator has resulted in the banishment from the dashboard of that inspiring array of sight feeds and gauge glasses so mystifying to the novice.

American Cars at Olympia.

The representatives of the automobile industry of America, Whites and Wintons, immediately caught the eye. Great interest is undoubtedly being taken in the appearance of the new 30-horsepower White steamer, for to this make of car is due the greater share of credit for the recent arrival of steam propulsion in public favor. The 18-horsepower White car which gained a gold medal in the recent Town Carriage competition of the A. C. G. B. I. is on view, and the big advantages of silence and flexibility possessed by this type of automobile are making many converts from the explosion engine side.

On the Winton stand the 25-horsepower model of last season is retained, with its special features of accessibility to the working parts of the engine and pneumatically controlled inlet valve lift. The new 35-horsepower Model M is seen over here for the first time, and its points will be familiar to the reader. The adoption of direct drive on third speed and indirect gearing for fourth is interesting, as this is a practice greatly growing in favor on British cars.

The use of four cylinders on a Cadillac car is certainly worthy of note, for the old and well tried single cylinder model, successful in every British reliability competition in which it has been entered, seemed likely to go on forever. The 30-horsepower model will be doing well if it proves as successful as its 10-horsepower sister. Features of interest are the copper water jackets, forced oil circulation, and three-speed epicyclic gear. A 10-horsepower car on the stand was fitted with a neat two-seated body which could be readily converted into a four-passenger vehicle.

The 15-horsepower Ford runabout interests many, for there is no British four-cylinder car approaching its American rival in price. A long-felt want should be supplied by this car and its general appearance on the roads next season may confidently be expected.

Maxwell cars have been building up a name for themselves in the English market during the past two years, and an interesting selection of this make was to be seen. The new 32-horsepower four-cylinder vertical engine model made its debut, the front position of the flywheel being noticeable. The 8, 10 and 16-horsepower models remain unaltered, some special interest being centered on the 16-horsepower car in view of the announcement of its recent non-stop record performance.

This selection of American cars, while small in number compared with the vast and growing extent of the industry, serves to indicate the gradual opening of a foreign market for American automobile productions; and if the mistakes of the bicycle era are carefully avoided, big British business possibilities should arise.

PARIS SALON OPENING DAYS' ATTENDANCE.

PARIS, Dec. 11.—As compared with the attendance last year, the crowds that have visited the Grand Palais during the first three days of the Salon show a falling off. The first days of the show, however, are generally regarded by the makers as given over to the sight-seeing of the bourgoisie, and they are accordingly not estimating the business that will be done by the size of the attendance. Wealthy people who visit the show to place orders for new cars will come later in the week, as they always have in previous years, and it is solely to this class that the majority of manufacturers look for support.

THE ROLL CALL OF THE OLD TIMERS.

One of the most appreciated functions of show week was an informal dinner at the New York Athletic Club, Thursday night, with Samuel A. Miles acting as the host. Those present at the dinner comprised practically the old newspaper guard of cycling, all of whom are now involved in automobiling in a newspaper or other capacity. Of course, there was more or less reminiscencing, as can be judged from the following roll call:

S. A. Miles, R. D. Garden, G. A. Wahlgren, L. R. Smith, J. C. Wetmore, Walter Waldrup, N. H. Van Sicklen, Fred Van Sicklen, E. L. Ferguson, F. Ed. Spooner, W. J. Morgan, A. N. Jervis, F. N. Roche, C. P. Root, R. M. Jaffrey, Alfred Reeves, P. T. Dacy, F. A. Egan, A. G. Batchelder, Harry Perry, S. Wallace Merrihew, E. Ralph Estep, A. R. Pardington, H. M. Swetland, H. F. Donaldson, E. Schwartzkopf, C. B. Canis, Joseph Porter, G. Bates, G. Beecroft, T. Kaufman, O. C. Eames and J. Kenfield.

Nearly everyone present was compelled to tell a story or make remarks that were related to the "old days."

WRIGHT BROTHERS AT THE AERO CLUB SHOW

PROBABLY the most unassuming and apparently disinterested trio that made straight for the exhibit of the Aero Club of America, on the seventh floor of the Grand Central Palace, last week, as soon as they arrived in New York, was composed of the Wright brothers, accompanied by Octave Chanute, a Chicago civil engineer, who has made a constant study of the subject of aviation during the past fifteen or twenty years.

The Wrights had no objection to discussing the subject of mechanical flight, omitting for obvious reasons any reference to the details of their own machine, and talked at length with such well-known authorities on motor design as Joseph Tracy and C. W. Kelcey and with enthusiastic members of the Aero Club such as Augustus Post and J. W. Altham. Mr. Kelcey in particular is very much interested in the subject of mechanical flight, and during his visit to the other side, on which he has just left, will make it a point to see Santos-Dumont's latest machine.

In discussing the subject of motor design for aerial flight, both of the Wright brothers gave it as their opinion that nothing whatever was to be gained by reducing the weight below six pounds per horsepower, and that when this limit had been attained the greatest desideratum is reliability. Further, an excessive normal speed should not be necessary in order to develop the rated power of the engine, the figure they favored personally being that generally followed by current practice in automobile motor design—that is, about 1,000 r.p.m. Where cooling was concerned their experience had finally led them to abandon the direct or air method in favor of water, which did not complicate the problem materially, as it was still possible to reach the weight limit mentioned with a water-cooled engine. Their experiments had shown that the air-cooled motor was not sufficiently reliable for the purpose and could not sustain its rated output for a sufficient length of time to make it of any value.

Regarding the use of French or other foreign motors for flying machines, they recounted some of the details of their experience in obtaining a satisfactory motor. This dates back to about three years ago, when they began by writing to every American maker of prominence whom they thought would be in a position to turn out a motor within the weight limit they had set as a maximum. The result was extremely discouraging, in fact not one of the makers in whom they had confidence would undertake the job. There was but one alternative, and that was to buy a foreign motor, but this idea was abandoned owing to the difficulty of obtaining replacements; there was then nothing left but to build it themselves, and this they set about doing.

Speaking of how they came to take up the matter of aerial flight, they said that their first experiments with gliding machines undertaken some five or six years ago, were made at first wholly for their own amusement. With increasing skill and success in what was originally but a form of pastime, their interest grew and they began to experiment with motor-driven machines. Unlike the average enthusiast, they are not optimistic to the extent of predicting any general use for the motor-driven aeroplane for some time to come. Its use will be confined to military purposes, and possibly as an adjunct to the means of amusement of the adventurous pleasure-seeker. Consequently they were of the opinion that their only prospective customers at the present time were governments. Moreover, they are not anxious to dispose of the sole rights of their invention, as they do not wish to be placed in a position where further experiments along the same lines would not be open to them. Further, that undoubtedly the average mechanic could go to work and duplicate their machine once he had obtained a good look at it. The foregoing conditions are probably responsible for the reputed hitch in their negotiations with the French government.

A CORNER OF THE AREO CLUB ROOM AT THE A. C A. SHOW—IT LOOKED LIKE AN OLD JUNK SHOP.

SOME IMPRESSIONS OF THE PALACE AUTO SHOW

By FORREST R. JONES.

THE A. C. A. exhibition showed that American manufacturers are now on a par with European builders in the design and appearance of the cars produced. The general impression is that advance has been made more in the details and accessories than in the general forms of automobiles. There is now a quite well-defined form of car to meet each line of use, from a city runabout to the touring car for a large party and long tours. There is one type that appears to a greater extent than before in proportion to the others. It is the high-powered two-seated car with an additional rear seat. This type seems to be growing in favor.

Several of the concerns that have been giving particular attention to the air-cooled motor are now putting out water-cooled ones in addition to their older line. This cannot be taken as indicating that the air-cooled motor is losing favor, however, but rather that the builders are endeavoring to meet the demands of those who will take only water-cooled motors.

There is more extensive adoption of the shaft drive than before. The simplicity and compactness of the mechanism of the shaft drive and the ease with which the moving parts can be protected from dust, mud and water have doubtless had much to do with the favor it is receiving. These advantages have outweighed, in the majority of cases, the chief item in favor of chain driving—the removal of all the weight possible from the axle and placing it above the springs so as to relieve the tires of the dead load they must carry. In a few cases the transmission change-speed gears have been placed directly on the rear axle, thus simplifying the usual designs somewhat, though by the addition of a greater dead weight to the axle, and more severe duty on the tires.

In side-chain drives there is apparently only one exception to the common custom of supporting the cross-shaft on the frame by rigid bearings in such a manner that when the car is more depressed on one side than the other, or a rear wheel rises over an obstruction or drops into a hole, the sprocket wheels over which one of the chains runs is thrown out of line with its mate. Such action brings the chain against the sides of the teeth of the sprocket wheel so as to cause undue wear and power loss by added friction, and when a chain is slack, even riding of the chain on the teeth and breaking of the chain, or wheel, or of both.

In one car, whose body is mounted on unusually flexible and easy-riding springs in order to use solid tires, the shaft carrying the driving sprocket wheels is cut into three parts and connected together by flexible joints. The mounting of the driving shaft and its connection to the axle, body and frame of the chassis is such that the part of the driving shaft that carries a sprocket wheel always remains parallel to axis of the rear wheels, whatever the condition of the spring between the axle and chassis frame as to compression or extension.

It has shown its excellent features by several years' use on a design of which many cars are in use. The usual radius rod is used for adjustment between the axle and driving shaft, and for maintaining the distance between them constant during the action of the spring.

The friction drive between shafts at right angles to each other (square with each other) is shown in several designs differing in the location of the softer of the two friction surfaces and in the number of flat-faced (or side) disks used. In two cases the curved surface, corresponding to the face of a pulley for a belt, is made of a paper composition in a part that is easily renewable. In another design the flat friction surface is made of leather or composition, and the cylindrical metal face of the driven member presses against it. The durability of the parts of the friction drive is vouched for by the guarantees of the car builders. They have the advantage of easy change of speed from nearly nothing to the highest, and of setting at any speed desired between these two limits. Reversal is secured as easily and with entire freedom from shock or excessive stresses. The two chief points to be considered in the construction of the friction drive are the procuring of friction surfaces neither of which will become flattened or grooved by a reasonable amount of use, and of moderate-sized bearings that will withstand the necessarily heavy pressures that must be maintained under heavy service conditions.

Much attention has been given to the brake equipment, but even yet there is considerable room for improvement in this highly important part of every car. The brakes are powerful enough in every case, but the great desideratum is durability and reliability. Many are so limited in rubbing surfaces and so located that they quickly wear down to the condition of requiring readjustment. Exposed brakes on the hub are especially subject to rapid wear on account of grit. While the majority of cars are amply provided with brakes for ordinary urban use and for comparatively level roads, many are not durable for very hilly or mountainous sections.

Equalizing devices for brakes used in pairs are now common. The equalizing bar is growing in favor, as it should. It is generally made short enough, or so limited in its motion, that if one brake shoe or drum breaks or fails the other can still be brought into action by moving the brake lever further than usual. Short equalizer bars placed vertically at the side of the chassis make a very compact, neat and efficient solution for securing equal force of application for both brakes, and equal resistance to the rotation of the wheel.

The metal cable method of equalizing the force of application of a pair of brakes is still used to a moderate extent despite the fact that if either one of the pair of brakes fails by breaking, the other becomes inoperative in consequence. Lightness and freedom from noise doubtless led to its general adoption.

There is evidence that builders will be able to eliminate the undesirable dry cell from high-tension ignition systems and substitute for it, at but slightly greater cost, the electric generator used in connection with a storage battery in such a manner that electrical energy will always be at hand at a practically uniform pressure (voltage) whether the motor is running or standing still. It is entirely practicable by this method to have enough current for small electric lights during the entire time the motor is running, and during stops of both car and motor for a considerable length of time, as well as for starting on compression or by hand. An ignition system that will accomplish this at a moderate cost of installation should meet with great approval among automobile users, if it is easily operated and maintained at small cost, as the evidences go to show. Such a method requires that the generator will charge the battery up to its maximum voltage soon after starting the motor and then discontinue putting current into the battery until it has discharged some of its energy through the lights or ignition system. The apparatus exhibited accomplished this by means of a constant pressure electric generator permanently connected to the storage battery. When operating correctly the battery, after being fully charged, neither receives nor discharges current as long as the generator speed is kept up to normal. But when the generator stops rotating on account of stopping the motor, or its speed falls below normal from any cause, the battery begins to discharge and continues up to the limit of its capacity or till the generator again comes up to speed or the circuit is opened.

Steel aprons under the motor and transmission gears are used more than last year. It is worthy of note that the necessity of providing a method of draining the fixed apron by a small hole or several holes in the lower part, will eliminate the danger from fire that exists with the use of the oilcloth or canvas apron so attached as to form a pocket and, in the customary absence of a drainage hole, retain oil and gasoline from leakage or spilling. The ignition of vapor from gasoline retained in the apron has been accountable for some fires on the road that have ruined cars.

ANNUAL BANQUET OF THE AUTOMOBILE CLUB OF AMERICA, HELD AT SHERRY'S, NEW YORK CITY, SATURDAY EVENING, DECEMBER 8, OBSERVING THE CONCLUSION OF THE SHOW.

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THE EIGHTH ANNUAL A. C. A. BANQUET

NEVER in the history of automobile clubdom has there been such a banquet as was the eighth annual of the Automobile Club of America, held Saturday night last, at Sherry's. The large banquet room of this famous place was filled to overflowing, and those present listened to scintillating speeches, enjoyed the unusual music of the new telharmonium, and viewed with interest the vitagraph pictures of the French Grand Prix, the Vanderbilt Cup race, and the International balloon contest. Of course everybody who is anybody in automobiling was present, or was prevented from being in attendance by something extraordinary.

Such names as Astor, Vanderbilt, Hamilton, Bishop, Morris, and Thomas were frequent, though the great industry itself was substantially represented and made up the greater part of the rollcall. Ex-Chairman A. R. Pardington and R. L. Morrell and Chairman Jefferson De Mont Thompson, of the A. A. A. Racing Board, were among the best-known notables of the occasion. President Colgate Hoyt was an efficient toastmaster, and the guest table included Gen. Horace Porter, Lieut.-Gen. Nelson A. Miles, Col. John Jacob Astor, Gen. George Moore Smith, Gen. Theodore A. Bingham, William K. Vanderbilt, Jr., William Pierson Hamilton, Dave Hennen Morris, Cortlandt Field Bishop, George F. Chamberlin, ex-Presidents Albert R. Shattuck and Winthrop E. Scarritt, Hon. J. B. R. Smith, Hon. Charles Stuart Rolls of England, Dr. Schuyler Skaats Wheeler, State Engineer Henry A. Van Alstyne, W. S. Fanshawe, John E. Borne, and last but not least Patrick Francis Murphy and the Rev. Wilton Merle Smith, whose speeches were the features of the evening.

President Hoyt on the Club's History.

President Colgate Hoyt, opening his remarks with a brief review of the club's work and present condition, said:

"We are proud of our surroundings, of our guests, and of ourselves. The Automobile Club of America has made greater strides in the past year than in any year in its history. It has reached its limit of active membership—one thousand members—and now has a waiting list, and with its waiting list and its associates and honorary membership, is over twelve hundred and fifty strong. I am happy to say our finances are in a sound condition. A first mortgage on our new property, together with $300,000 in 4 per cent. mortgage bonds—taken entirely by our members—with the money already appropriated by the club for the purpose will, without doubt, meet all our obligations, and enable us to continue in a flourishing and satisfactory state. We believe in respecting most thoroughly the rights of others, but we also claim that we have some rights as well that should be respected. We believe in the right use and not the abuse of the great highways."

General Porter's Witty Comments.

The first toast of the evening, "The Automobile Abroad," was responded to by Gen. Horace Porter, who said, among other things:

"We are accustomed to think of this land as characteristically positive, but, it seems to me, we are making it the most negative of all countries. Now we have telegraphy without wires and oranges without seeds and watches without keys and families without children (laughter), and lastly carriages without horses. And who knows but what with the advances of modern civilization we may reach so near the millennium as to have banquest without speeches.

"I was sent to France nine years ago. I found myself in France, in the original country of automobiles, but it is not an exaggeration that the car at that time was crude. When you wanted to go out in it in a hurry you found that the muffler was troubled with insomnia, the magneto in a faint, and the carbureter suffering with an acute attack of indigestion, feeling something like a banqueter after a full supply of food which he found had lodged in his piloric orifice. Well, there were so many accidents in those days that it was thought by many that the automobile had been invented to take the place of wars to carry out the doctrine of depopulating the world. It was as hard to retain the vital spark as the ignition spark. Well, it was regarded as a joke there for a time, the automobile.

"Then France became in earnest an automobile country, and that great automobile club was formed there, which, as you all know, performed a very valuable service. It showed France, if she were liberal in her regulations and laws, would build up an industry which would employ over 100,000 skilled workmen. I think the evolution of the automobile has been more wonderful. I believe that there is one enemy that we ought to frown upon in regard to automobiling in this country, and that is the conscienceless, heedless, reckless, offensive scorcher. He it is that has caused more adverse legislation, more opposition to automobiles than anybody else. It is not fair that an ordinary automobilist should suffer in order that such a man may go unpunished."

Mr. Vanderbilt on the Long Island Parkway.

"The Long Island Motor Parkway" was responded to by William K. Vanderbilt, Jr., who said:

"It has been the dream of every autoist to own a perfect car and to have a road without speed limit, and, thanks to the promptness with which a number of you have responded to our urgent appeal, the last named is about to be realized. There is to be constructed a private right of way through the center of Long Island, to be built on a 100-foot right of way, and having an approximate width of 50 feet. Grade crossings for both railways and highways are to be all eliminated by the construction of bridges or tunnels, and the entire distance is to be fenced. Access and egress to this boulevard will be obtained at toll-gates erected at intervals of about five miles. The surface of the road will be either oiled or tarred, and maintained in first-class order, so that the motorists can enjoy a ride without dust, without bumps, and, last but not least, have no interference from the authorities. The boulevard will give the manufacturer the needed place to try his cars, and will afford others the opportunity of driving with comfort to and from their country houses. To give you an idea of the enthusiasm evinced it is but necessary to state that 25 miles of the right of way have already been donated, and a large sum for the construction subscribed."

What a Horseman Had to Say.

Patrick Francis Murphy's speech was the most humorous of the evening. It was from the horseman's point of view:

"The automobile, with its self-made dust, somewhat obscures the horseman's view, and to look with an unprejudiced eye, he is often compelled to consult an oculist. The horseman's view is generally from behind, and, in the philosophy of life, the man who is behind the times is apt to speak ill of them, on the principle that nothing looks well from behind. General Porter has reflected credit on his country as a diplomat. Diplomacy is the art of seeming to tell the truth—without lying. And a solitary horseman in the midst of his mechanical rivals must needs be a diplomat.

"A good road bristles like a porcupine with temptations. A cynic has observed that in this life we can resist everything but temptation, and anyone can resist temptation when it is offered by the wrong person, or at an inconvenient time. When the automobilist is forewarned of traps it is just as easy to do right as it is to be virtuous on a desert island. The automobilist starts out with best intentions. There is a certain place which shall be nameless that is paved with good resolutions, and in the automobile calendar will be found this proverb: 'The ditches are full of afterthoughts.'"

Gen. Miles and the Club's Chaplain.

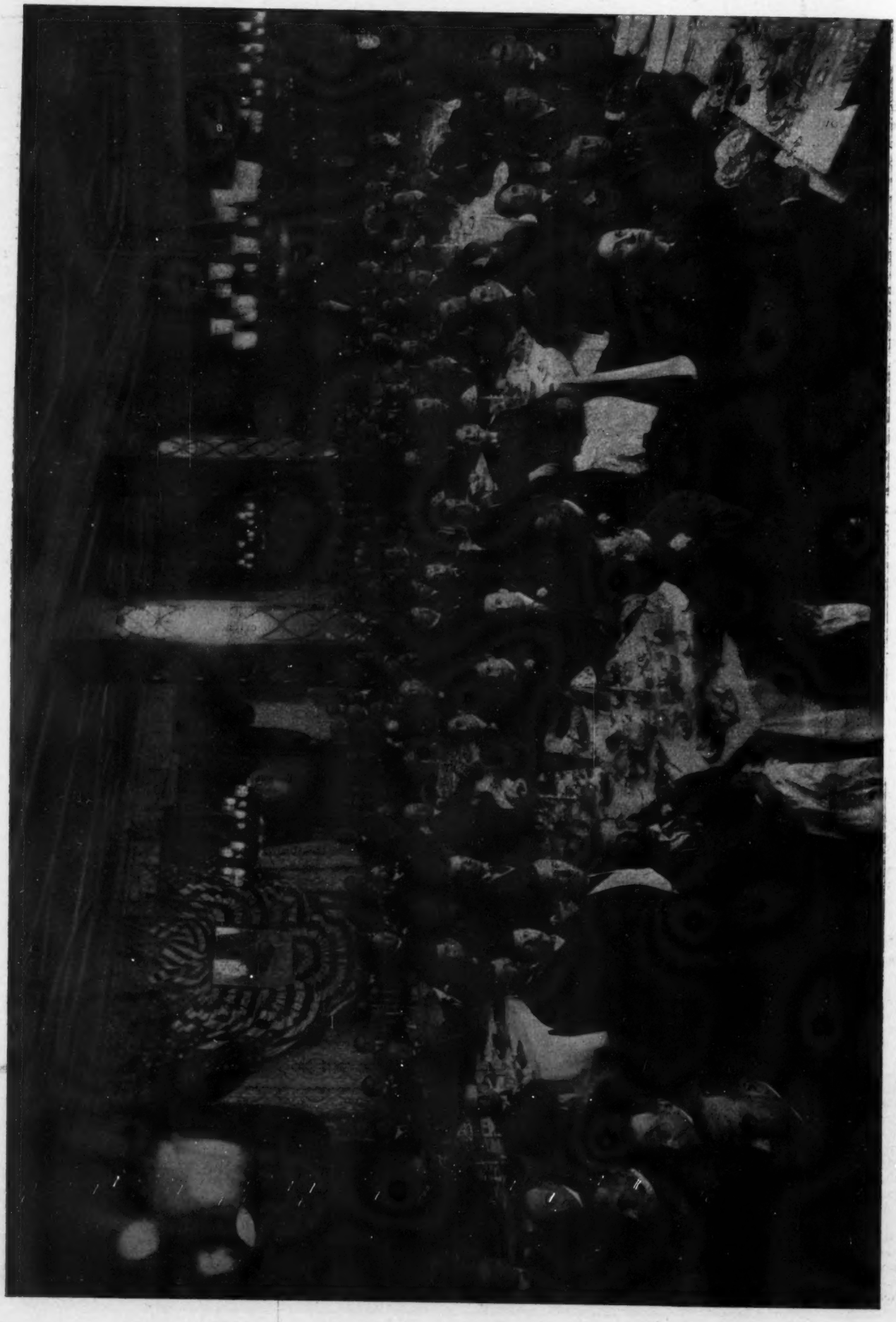
Lieut.-Gen. Nelson A. Miles spoke on the automobile from a military point of view, expressing unbounded belief in the general utility of the motor-driven vehicle.

"The Automobile from the Pedestrian's Point of View" was responded to by the club's chaplain, the Rev. Wilton Merle Smith, who said:

"As I was riding along not long ago in my beautiful Packard, with an ease and poetry of motion unequaled, save in the imagination of the poor victims of the importers, I came suddenly on a man directly in front. He dodged one way and he dodged the other, and we came very near running him down; our fender almost struck him, and he made me to realize what the Apostle meant in dividing all humankind into classes, namely the quick and the dead. It is of the quick or the dead that I am to speak this evening, the pedestrian, and these pedestrians, often divide into children and fools. The noblesse oblige of our sport ought to make us to have a care for such as these."

Photo and copyright by the Geo. R. Lawrence Co., New York, Chicago.

1906. ...AL BANQUET OF THE AUTOMOBILE CLUB OF AMERICA, HELD AT SHERRY'S, NEW YORK CITY, SATURDAY EVENING, DECEMBER 8, OBSERVING THE CONCLUSION OF THE SHOW.



LUNCHEON OF THE AMERICAN MOTOR CAR MANUFACTURERS' ASSOCIATION AT THE HOTEL MANHATTAN, NEW YORK CITY, THURSDAY, DECEMBER 6.

Photo by Geo. R. Lawrence Co., New York, Chicago.

HOW THE A. M. C. M. A. ENTERTAINED ITS GUESTS

ONE of the most important functions of show week was the Thursday luncheon given by the American Motor Car Manufacturers' Association at the Hotel Manhattan. The several hundred in attendance were gastronomically and intellectually pleased and instructed. Job E. Hedges, the general counsel of the association, was a most versatile and scintillating toastmaster. The list of speakers included James Couzens, chairman of the A. M. C. M. A. Committee of Management; Benjamin Briscoe, chairman of the Show Committee; with the A. C. A. talking representatives, comprising President Colgate Hoyt and Gen. George Moore Smith, chairman of the Show Committee. Other notables at the speakers' table included A. R. Pardington, who spoke on the Long Island Motor Parkway; Alfred Reeves, general manager of the A. M. C. M. A., who came in for a deserved compliment for his excellent work; S. M. Butler, secretary A. C. A.; S. A. Miles, general manager N. A. A. M.; D. J. Post, president Motor and Accessories Manufacturers, Inc., and Dr. Schuyler Skaats Wheeler, chairman of the A. C. A. Building Committee.

In the course of his remarks Chairman Briscoe said he would deprecate the time when automobile shows should cease to provcke popular enthusiasm. "I am a firm believer in co-operation," he said, "and the assistance of the Automobile Club of America has been material in giving the public and prospective purchasers a broad object lesson of the best American cars of to-day."

Gen. George Moore Smith, chairman of the A. C. A. Show Committee, said that he was a firm believer in American cars, and, judging from statistics of the past two years, he prophesied that it would not be long before the exports of American cars would far exceed the importation of European machines.

The speech of Mr. Couzens, chairman of the Committee of Management, was as follows:

Although not a speechmaker, I presume my official position in the American Motor Car Manufacturers' Association requires me to say a few words on this occasion when we have with us so many exhibitors of motor cars at the Palace show—so many of our good friends, the newspaper men, and so many other notables in the automobile industry, now advanced to a point where it is considered among the most important in this country.

It seems to me that we exhibitors in the present show are in a peculiar, but happy, position of being fancy free to express our thoughts, to transact our business, and to fairly deal with our people in the way that seems best in our judgment and without instructions from anyone. We are followers of that great American doctrine that ultimately brings the best results in an industry of any sort. We see before us many examples of successful combinations and we who own or control our plants are easy in mind for the outlook for future business.

Although we are competitors in business, there are certain mutual interests which can be best cared for by a central association and that was the main reason for the formation of this association and counts largely for its increased strength the past few years.

I am not going to bore you with the details of the work which this association has done, nor of the things that it plans to do in the future. They are too well known, both from results that those of you who are members undoubtedly appreciate, and by the publication in the newspapers of the details of that same work, which non-members must have read. In my opinion, every manufacturer of motor cars who is an exhibitor at the present show should be included in the ranks of the American association. There is not one of you who likes to be in the position of a man who wants to secure benefits without shouldering his part of the work. The fact that thirty-nine manufacturers are now enrolled is sufficient evidence that the aims and work of the association are right, and to me it would seem that every manufacturer should be included in the membership.

Of course, in the work of this association, there are certain things accomplished which benefit the trade in general, and which manufacturers receive the benefit of without holding membership. On the other hand, there are scores of other works that are naturally accorded and distributed for the benefit of our members alone. We are all aiming to continue the prosperity of the automobile business; to make it more permanent and, of course, to entrench ourselves in business in the strongest possible manner. That this can be aided very largely by an association of this character admits of no argument.

Shows are naturally important factors in business, and in this connection the association has been unusually active. We are indebted very much to the Automobile Club of America, that stanch and independent organization of sportsmen, for the promotion and management of the present show, and I am glad to see with us to-day the officers of the club who brought about the present exhibition. I think it is generally admitted that our association, by its underwriting of certain space at the show, contributed considerably to its success, while by the move we not alone helped the show itself, but secured for our members preferred positions at special association rates.

Our Committee of Management is working, and will continue to work, for special benefits for our members whenever possible. Among the matters which have received attention and are receiving attention, might be mentioned automobile shows; standardization of parts; the securing of agents; the issuing of complete lists of agents and dealers in the country in book form; handbooks and advertising posters; a uniform system of guarantees.

The association is always ready to oppose inimical legislation, endeavors to advance the interests of good roads, and one of our committee is now working for a national law, with the idea that in the use of public roads, in one State and in all, automobiles can be brought under the rulings of the interstate commerce acts.

Through our efforts last year a new and larger type of freight car was built by the railroads, and only recently our General Manager attended the hearing of the official classification committee, with a view of having more favorable freight rates put into effect, particularly with a view of having automobiles in carload lots put in the second class. Advertising ideas are advanced; special concessions are secured in the matter of insurance, and the possibility of a liability insurance that should prove profitable to all our members. Importations and exportations; opening of new fields of trade; and a score of other things are constantly coming up and receive attention.

Everything that has been done, and will be done, will tend toward the improvement of the automobile as a whole, and of natural benefit to our members. In all our work the results benefit the individual buyers and the agents in the same ratio as it benefits the manufacturer. The expense of membership in the American association is so reasonable that no maker can afford to be outside the field. There is no heavy drain in the form of royalty, nor is anything done that tends to decrease the profits of the individual members.

Although some of you may have an idea that the American association is formed primarily to oppose what is known as the Selden patent, I must declare them in error. Our association does not oppose the Selden idea, although its members do not believe in it. The association is formed for mutual protection in any matters that may arise which would be detrimental to their own interests. Of course, as you know, the Ford Motor Company, singlehanded, is fighting to prove the invalidity of the Selden idea, and I have the word of Henry Ford, president of the Ford Motor Company, that he is in the fight to stay and, in his opinion, there is no doubt of the outcome being favorable to our side.

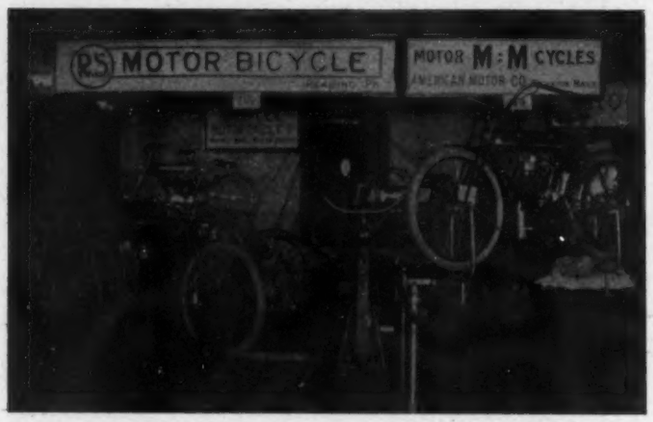
In conclusion, gentlemen, I need hardly say that the American association appreciates your attendance at this luncheon, and I hope and feel that this gathering will tend to more strongly cement the mutual interests which we all have, and which I am confident is going to make the American Motor Car Manufacturers' Association the leading factor in the motor car industry before very long.

WASHINGTON STATE'S GASOLINE SHORTAGE.

SEATTLE, Dec. 6.—As a result of the recent flood, which for several days isolated Western Washington, it became necessary to substitute benzine for gasoline in the operation of automobiles in most of the Puget Sound cities. Seattle, being near the base of supplies, was a little more fortunate than other cities, but in Tacoma and Bellingham benzine is still being used. The daily consumption of the Standard Oil product is 2,000 gallons in Seattle, and usually a ten days' supply is carried. When the flood broke loose, seventeen days ago, that supply was on hand. The flood was very extensive and transportation has not been fully resumed. There happened to be a good supply of benzine on hand, and that has been used to some extent here. The first shipment of oil, 8,000 gallons, was gone next day.

PROGRESS OF THE AMERICAN MOTORCYCLES

JUDGED by the recent Palace show, there are many signs that motorcycling is gaining steadily in popularity, although perhaps not as readily as its devotees could wish. This year the motorcycle appeared in the show much more conspicuous than formerly, as practically all of the motorcycle exhibits were grouped



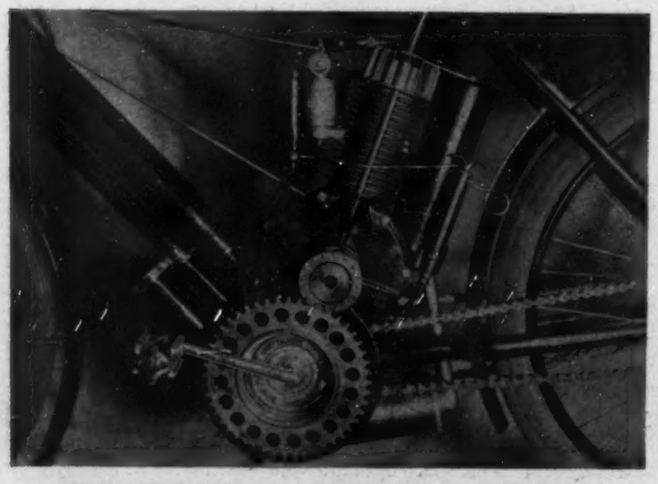
EXPONENTS OF THE CHAIN AND BELT FORM OF DRIVE.

together in a very prominent place. There was always an interested group of spectators around the exhibits of the principal makers, and that this interest was not idle curiosity was made apparent by a statement of one of the principal exhibitors that there was more business at the show than at any of the previous shows of the past several years.

Perhaps the most noticeable feature of this year's motorcycle exhibit, taken as a whole, is the marked tendency toward originality of design as compared with former years. Formerly there were belt and chain-driven machines; the latter, of all makes, being about as much alike as "two peas in a pod"; in fact, it would have taken a good expert to tell one make from another at any great distance. This year, however, the principal features of design differ to a considerable extent, although in the main the improvements are along the same lines.

These changes include the enlargement of the gasoline and oil tanks. The latter is of especial importance, for, while gasoline can now be purchased almost any place, good motorcycle oil is comparatively scarce. As in former years, splash lubrication still holds its popularity for motorcycle work, but there is a marked tendency to use improved forms of oil measures which do not necessitate a dismount in order to lubricate the motor.

In the chain-driven machines it has been found advisable to employ two reductions of speed in the motor, as a single reduction

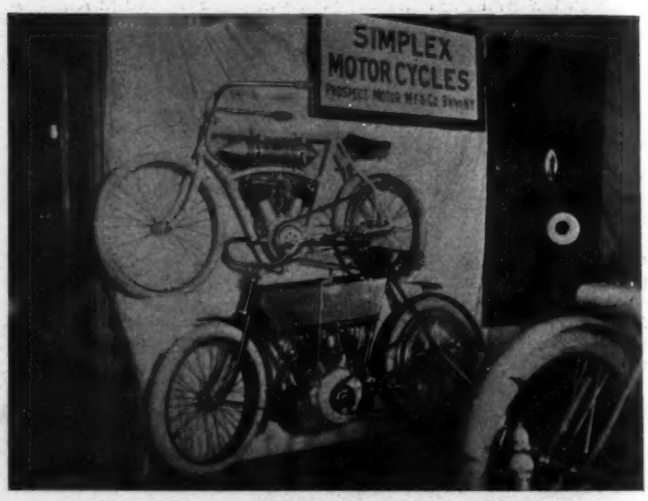


NEW CARBURETER AND DRIVING GEAR OF THE INDIAN.

sufficient to give the slow speed and power necessary on some of our rough American roads cannot be obtained without using a chain sprocket on the rear wheel of unduly large size. Formerly this was accomplished by the use of two chains, one of which ran from the motor to a countershaft whose axis coincided with that of the pedal crankshaft. This year, however, a roller pinion and gear has been substituted for this chain, in one case, and, in the other, this countershaft has been mounted for a separate hanger from the pedaling crankshaft.

Ignition so far is obtained on the American motorcycle universally by dry cells and coil, the storage battery never having secured a foothold here for this purpose. There are signs of the coming of the magneto, one foreign maker exhibiting a magneto adapted for this purpose. A well-known American maker of ignition devices also shows a very neat machine especially adapted for this purpose, together with means for attaching to a motorcycle.

Only one foreign make of motorcycle is exhibited at the show, and this is a four-cylinder machine with bevel gear drive. It is a splendid piece of work, being equipped with magneto ignition, but its price puts it out of direct competition with the American machines. It is, however, much better adapted to our American roads than the average foreign motorcycle.



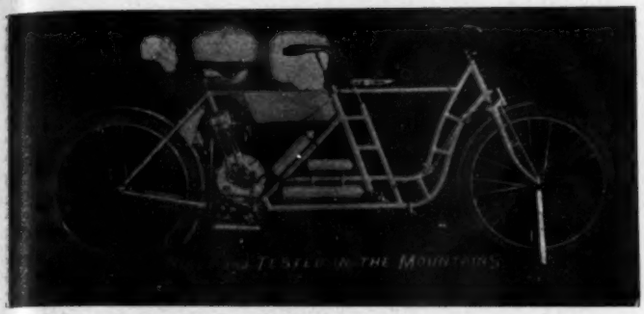
THE SIMPLEX TWIN TOURING AND RACING TYPES.

A change by one of the leading makers which is causing much notice is the use of the mechanical inlet valve. The measure of success achieved by this device will be watched by all the other makers with much attention.

Motorcycling has been called a selfish sport. This statement was certainly belied this year by the exhibition of tri-cars and a very neat combination tandem. In this case the drop frame is in front, although the control of the motor is in the hands of the rear rider.

The tri-car, on the other hand, admits of taking a friend to ride who may not be athletically inclined, and, in fact, offers most of the advantage of a small runabout, being fairly speedy and a good hill-climber. It has the additional advantages over the average runabout that it costs considerably less, can be stored in a much smaller space, and is much easier on tires. The tandem can be compactly stored, and has much better ability on hills and rough roads.

Up to this year, while many salesmen, electricians, and linemen, etc., have used the motorcycle in a business way with much success, its driving has been confined largely to the pleasure-seeker. The tri-car delivery van has made its appearance, and has been employed quite generously. Being a new thing, its use



THE FIRST OF ITS KIND—THE NEW "R. S." TANDEM.

has not been widely extensive. It would seem, however, that this device could fill quite an important place in delivery work, especially at summer resorts where the trade is particularly brisk in small things. Its cost is actually less than that of even a respectable horse and wagon, the maintenance and repair being but a trifle and it being extremely rapid and easy to handle.

So far the demand for first-class American motorcycles has far exceeded the supply, and for this reason the makers have hardly used any effort to extend their business. This year, with quite an increase in the facilities for the manufacture of motorcycles, it is probable that there will be more incentive to "boom" the sport.

The most radical change on the 1907 Indian is probably the use of a roller pinion and gear in place of the short chain heretofore employed. This is entirely inclosed in a dustproof case. In the cut an extra pinion and gear are shown, superposed on the gearcase, in order to make clear the construction. The next change in importance is the use of the new pump oiling device combined with the large cylindrical tank in the rear of the cylinder. The enlarged tank will be readily appreciated by motorcyclists who have experienced difficulty in obtaining good oil.

HOW ONE MAKER GOT INTO THE INDUSTRY.

Samuel E. Baily, president of the York Motor Car Company, makers of the Pullman car, tells with some amusement of the way in which he got into the automobile game some four or five years ago. He says that a promoter came along in York and pointed out a vacant lot which Mr. Baily owned near one of his large carriage factories, and stated that it would be an ideal spot upon which to erect an automobile plant, and that he proposed to get capital if he could make arrangements with Mr. Baily to take a share of the stock and turn in the lot. Mr. Baily accepted the proposition and then waited while the promoter went in search of other investors. Shortly afterwards $15,000 worth of machinery consigned to Mr. Baily arrived, and he found it had been ordered in his name. About two weeks afterward $10,000 more machinery put in an appearance, and this with the first was stored away in a warehouse. Later the promoter showed up and acknowledged that he had not been able to secure other capital, although he admitted to having gone ahead and ordered the machinery. He said further that he had let contracts for the erection of the building in Mr. Baily's name.

Deftly disengaging himself from the promoter forever, Mr. Baily went to manufacturing automobiles, having induced several of his friends to put money into the plant. Almost the first machine produced was a freak with six wheels, which Mr. Baily says he still has in storage, and which he goes in and inspects every once and a while when he feels himself becoming overconfident. Then the company succeeded in acquiring a designer who built a machine with the transmission alongside the engine, which had a six-foot gauge and a hood which looked like the top of a locomotive boiler. It was made to sell at $2,500, but ultimately a second-hand dealer took the output at $800 apiece, and alleged that he was "stuck" at that.

Three years ago the Pullman Company found itself and went to manufacturing real automobiles.

THE VERY COMPLETE INDIAN TRIBE OF TWO AND THREE WHEELERS FOR PLEASURE AND PROFIT.

A NEW DESIGN PNEUMATIC HUB.

Despite the great array of inventions designed to take the place of the pneumatic tire that seem to differ so endlessly both in principle and detail, a little study of their construction makes it plain that, as a whole, they may be divided readily into two large classes—those in which the compensating or absorbing effect of the device employed is designed to be placed on the rim of the wheel, and those in which it is situated at the center, usually forming the hub. The former type is greatly in the majority, the latter or hub placing being employed in but comparatively few instances. One of the latest of these, for which much is claimed by its sponsor—G. W. Bell, a consulting engineer of Liverpool, Eng., and Detroit, Mich., is the Bell pneumatic steel hub. While its inventor limits its title to "pneumatic" where an enumeration of its shock-absorbing qualities is concerned, it also is somewhat in the nature of a hydro-pneumatic device, though the use of oil is incidental.

READY TO RECEIVE OUTSIDE PLATE.

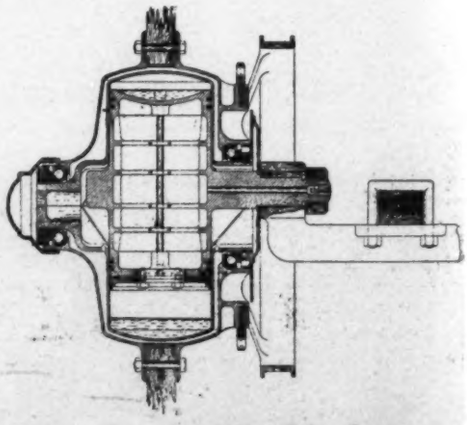
In this, in fact, is claimed to lie its chief virtues in that it avoids those pitfalls into which prior inventors have stumbled in the employment of rubber and fabric as air-containers at a point where the strain is far beyond the power of such materials to withstand. As its basic principle, the new Bell hub relies upon the absorbing qualities of four columns of compressed air employed in conjunction with a forced circulation of heavy oil, one of the chief functions of the latter being to maintain the packing joints tight. Each column of air is contained between a piston and cylinder located in the hub of each wheel and interposed between the wheel itself and the axle. In order that the resilience of the suspension may be varied to suit the requirements of the load as well as of the road over which the car is traveling, a small air compressor, driven by the motor, maintains a constant pressure in a storage tank, a safety and regulating valve provided for the latter being controlled from the driver's seat. From this pressure tank leads are taken to each of the hubs, and a controlling valve within easy reach of the driver permits of the pressure in the latter being varied to suit the requirements of the car as changes of road occur without stopping—something that has not been attempted previously.

THE INVENTOR OF THE HUB.

By referring to the accompanying illustrations of the device, it will be noted that the mechanism of this pneumatic hub consists of three essential parts: first, a vertically disposed hollow piston, rigidly attached to the axle; cylinders above and below the axle operating on the piston and giving a vertical displacement of 2 inches for the rear wheels and of 1 1-2 inches for the front wheels, and third a hollow hub entirely enveloping the pistons and cylinders, and which revolves on hollow arms forming integral parts of the cylinders, the spokes of the wheel being attached in the usual manner to the outer hub between the flange shown. The upper cylinder forms with the top of the piston an air recoil chamber or buffer, which incidentally is utilized to produce a forced circulation of oil to maintain the lubrication of the moving parts of the device as well as to keep the packed joints tight, as already referred to.

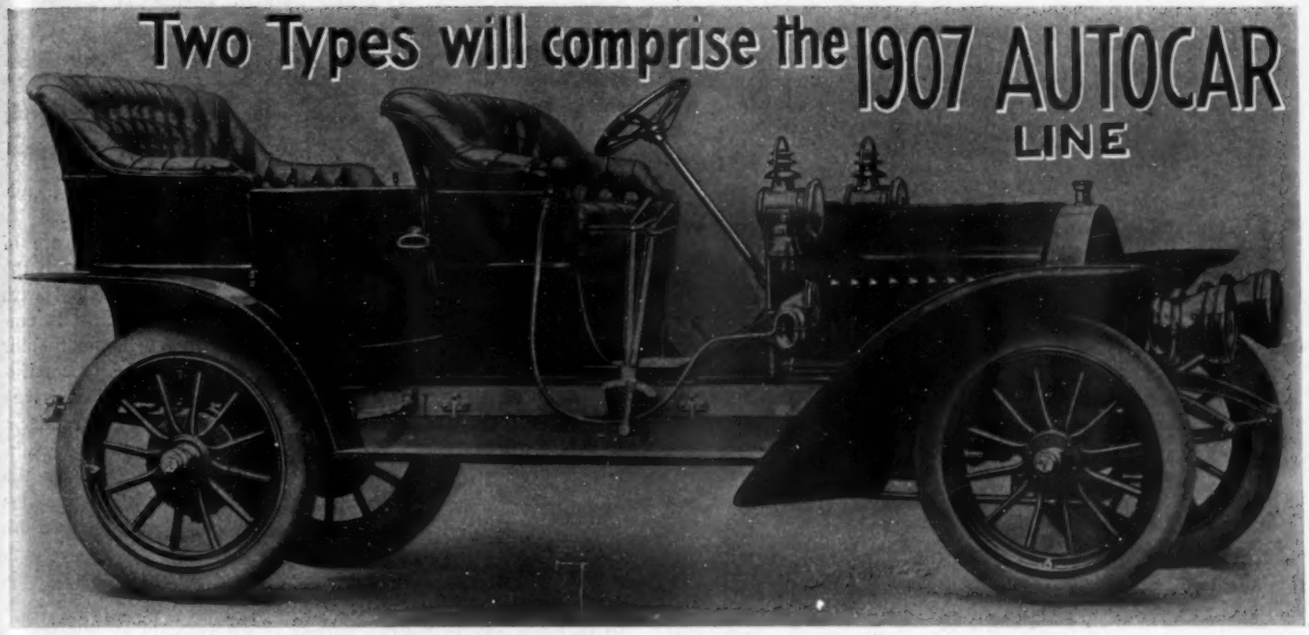
VIEW OF THE WHEEL DISMOUNTED.

In service the action of the device is as follows: When the wheels strike an obstruction the piston is forced down into the low cylinder, compressing the air contained therein, at the same time drawing air through the upper row and oil through the lower row of ports shown above it as it descends. The oil thus drawn in collects in the concave or recessed head of the piston, at the same time serving to lubricate the sides of the latter, and its compression rings and guides. It is here trapped so that on the rebound of the wheel the piston rising in the upper cylinder forces the oil to the back of the cup leather and the front of the rings at the lower end of the piston. It escapes past the piston rings through ports by the further motion of the piston, and then flows down the outside of the lower cylinder, escaping into the outer revolving hub casing, where it is again elevated by centrifugal force and deposited in the reservoir located on the top of the upper cylinder, thus completing a cycle of its travel. It is obvious that by means of such thorough lubrication, as well as the constant maintenance of a thick film of oil on all parts of the device, that both loss of air and friction are reduced to a minimum.



TRANSVERSE SECTION CENTER OF HUB.

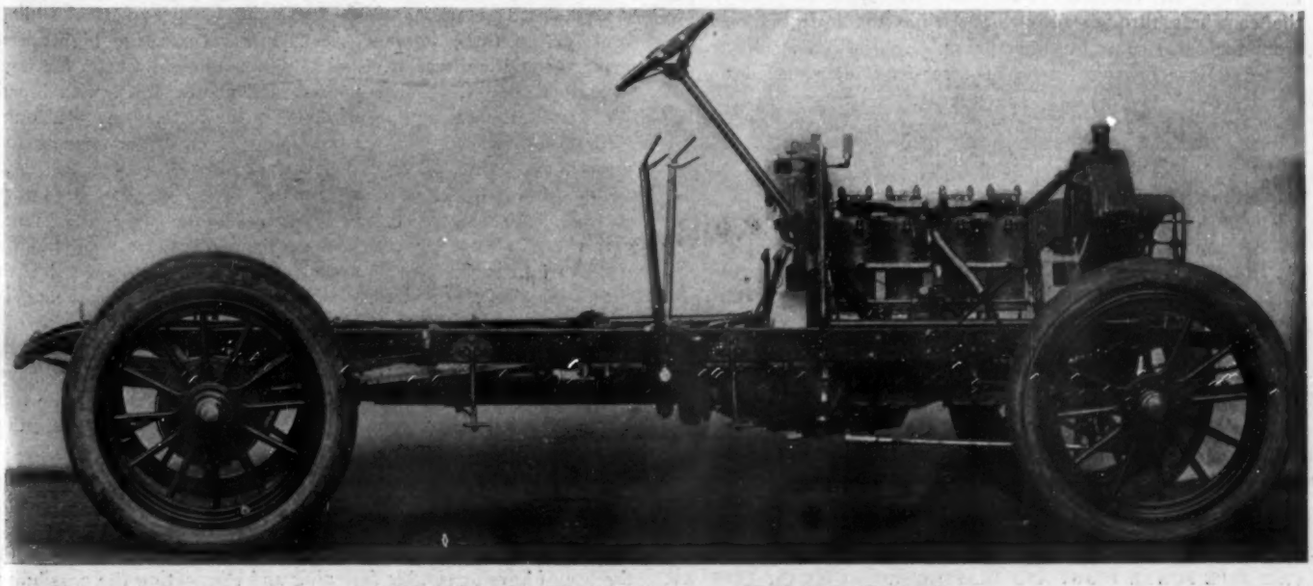
Neither the principle nor the manner in which it has been taken advantage of in this instance is a matter of theory, as the use of compressed air as a buffer is of long standing, while its embodiment in the Bell pneumatic hub has been given a test of some 10,000 miles under all conditions of traffic to be found in both rural and urban districts during the past twelvemonth. The car on which the device was tested out during the last year was a stock touring machine of the double-chain-driven type, weighing about 3,000 pounds. The wheels were of the usual artillery type, 36 inches in diameter, and fitted with solid rubber tires.



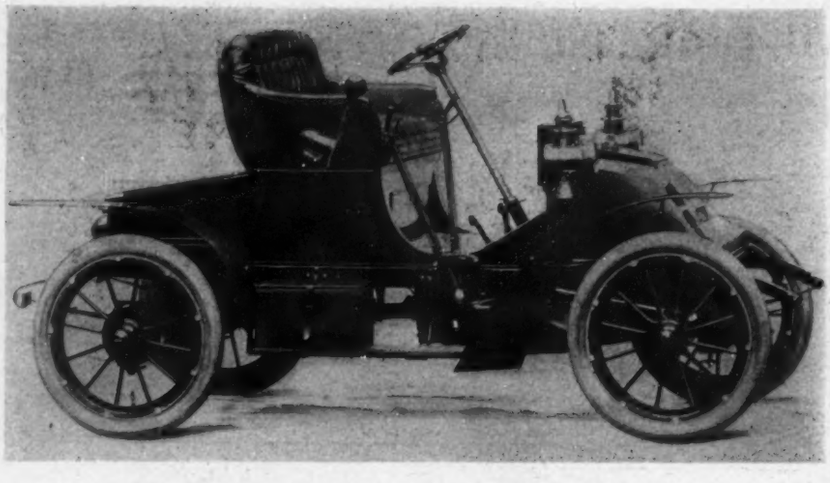
AUTOCAR XIV TOURING CAR, OF GENEROUS PROPORTIONS, THE AUTOCAR LEADER FOR 1907.

FROM present indications it is evident that there will be but a comparatively small number of makers who will cater to the wants of the man who wishes to take care of his own car during the coming season, so that the two models which will constitute the Autocar line for 1907 will practically find themselves in a class of their own. Comfort, speed and luxury are as much sought after by the autoist who must dispense with professional help in looking after his car as they are by the man who maintains a stud of cars and does not know the magneto from the oil pump, but he does not, for obvious reasons, wish to go to the same extremes where power, weight, and consequent cost of upkeep are concerned. To this class of autoists both the new types of the Autocar will appeal very strongly, and they will doubtless be very largely represented on the road during the coming season.

The new type XIV touring car, which will be the leader of the line for 1907, is a vehicle of generous proportions, ample wheelbase to insure easy riding, and sufficient power to make it capable of anything in the way of speed or touring that can be desired; still it is a car that can be maintained and cared for by the owner with a minimum of expense and trouble. The motor is of the four-cylinder, vertical, water-cooled type, favored by current practice, and is located forward under the bonnet as usual. The cylinders, which measure 4 1-4 by 4 1-2 inches, bore and stroke respectively, are of the independently cast pattern, the heads, water jackets, and exhaust valve chambers being made integral, in addition to which the water jackets are designed to cover the entire heated surface of the cylinder. Both valves are mechanically operated, and instead of following either the plan of one side or opposite disposition the expedient of leaving the exhaust valve in its customary location and putting the inlet valve in the center of the cylinder head has been adopted. This valve has further been made of ample dimensions, so that giving it but a small lift not alone insures the admission of a full charge of mixture, even at the highest speed of the motor, but likewise conduces to silence in operation. Another advantage accruing from this disposition of the valves is the prevention of pocketing of the burnt charge, thus diluting the incoming mixture more or less with a consequent decrease in the efficiency of the motor. In spite of the fact that what is equivalent to an opposite disposi-



CHASSIS TYPE XIV AUTOCAR FOR 1907. INLET SIDE OF MOTOR.

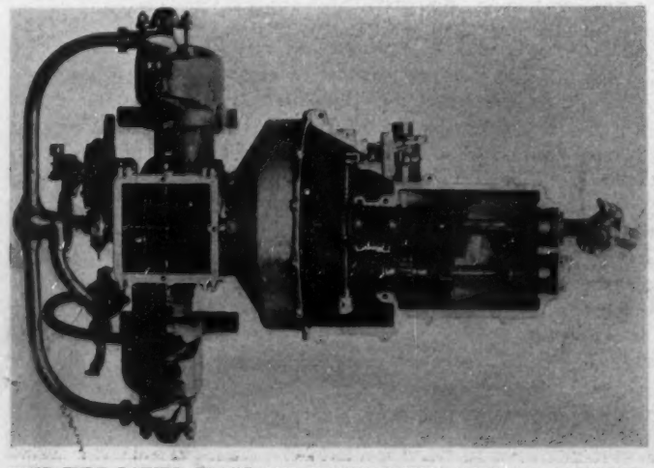


TYPE XV TWO-CYLINDER AUTOCAR RUNABOUT FOR 1907.

tion of the valves is employed where their operation is concerned, this has been accomplished with the use of but a single camshaft, a direct lift being employed for the exhaust valves and a set of push rods and rocker arms for the inlet valves. In each case the lifts are provided with large rollers, thus minimizing both the friction and wear on these surfaces. Adjustment of the exhaust valve is by means of cap screws tapped into the plungers and held in position by lock nuts, while the inlet valve adjustment takes the form of a cap and lock nut on top of the valve lift rod.

The crankshaft is a one-piece, weldless steel forging, oil tempered, running on three four-stud adjustable bearings, the large flange to which the flywheel is bolted being made integral. The flywheel is readily removable with little trouble, yet is so firmly held as to be in no danger of running loose or getting out of true. All bearings are bolted to the upper half of the special aluminum alloy crankcase, so that the lower half may be removed without disturbing the adjustment of any of the moving parts of the motor. Unless the latter are in need of removal it is unnecessary to disturb the crankcase, as the large openings in the upper half make the big ends of the connecting rods as well as the bearings accessible for adjustment. When necessary to dismantle the engine this arrangement permits of the removal of both the crankshaft and the pistons without disturbing the cylinders. Both the camshaft and pumpshaft gears are located forward and are protected by an aluminum housing and run in oil.

The water-circulating pump and the commutator or timer are mounted on the crankcase, the former being driven directly from the camshaft through fiber gears while the latter is operated from the same shaft by miter gears. Lubrication is effected by means of a mechanical type of force-feed oiler placed on the forward side of the dash under the hood with sight-feeds on the dash proper. A lead is provided for each main bearing with an additional feeder to maintain the crankcase level for splash lubrication, each lead being worked by an individual pump. As the camshaft bearings are open on the interior of the crankcase, these as well as the big ends of the connecting rods are lubricated by splash. A Holley carbureter takes care of this essential function of the motor, while the high-tension type of ignition supplied with current from a set of accumulators is employed. Cooling is effected by a fin tubular radiator supplied by a gear-driven centrifugal pump and supplemented by a belt-driven fan mounted directly back of the radiator. The cylinder castings are designed to maintain a large volume of water around the valves at all times, which greatly facilitates the matter of cooling. The gasoline tank holds sixteen gallons of fuel, in addition to which a smaller tank located within it contains four gallons more as a reserve. This reserve tank must always be filled first before the regular tank can be filled and its contents cannot be used except by turning an emergency valve connecting it with the regular fuel line to the carbureter.



UNIT TYPE POWER PLANT AND TRANSMISSION AUTOCAR, TYPE XV.

The unit plan of constructing the power plant has been followed by combing the motor, flywheel, clutch, and transmission in a special aluminum housing cast of an alloy designed to give the maximum tensile strength. This lends itself more readily to the three-point suspension, the ends of a transverse brace extending across the forward end of the motor, being made fast to opposite points on the main frame, while the third point of support is placed under the transmission. The latter is seated on a stiff spring, thus avoiding the necessity of employing a sub-frame. This method of supporting the power plant as a unit permits it to move relatively to the running gear or body of the car to such an extent that it is impossible for any unevenness of the road or the action of the car on its springs to disturb the alignment of the power plant with the cardan shaft or of any part of the unit to get out of line with any of its other components. A further advantage of this plan is the reduction of friction and consequent power losses in the transmission to a minimum.

The Autocar patented floating ring flywheel clutch of the metal-to-metal type forms the first step in the transmission. It is positive acting with no wearing surfaces, and permits of easy starting without the jerking characteristic of some types. The change-speed gear is of the straight or progressive sliding type, giving three forward speeds and reverse, the high speed being through a direct drive. The pinions are solid drop forgings of high carbon steel, oil-tempered, and are designed with broad faces and an ample amount of metal in the teeth. The shafts are also of high carbon steel, running on Hyatt roller bearings of great length, thus insuring perfect meshing of the pinions and eliminating wear. The gears run in a bath of oil. The gear-shifting lever, as well as the emergency brake lever, are on the driver's right hand, the clutch and service brake being operated by the usual pedals. The emergency brake is interconnected with the clutch shaft, so that the clutch is disengaged before the application of the brake, thus cutting off the power from the rear wheels before the latter are retarded by the braking action. In place of the usual throttle and spark levers on a sector above or below the steering wheel, hand grips incorporated in the rim of the wheel itself provide the means of control, thus giving the driver the use of both hands in case of an emergency.

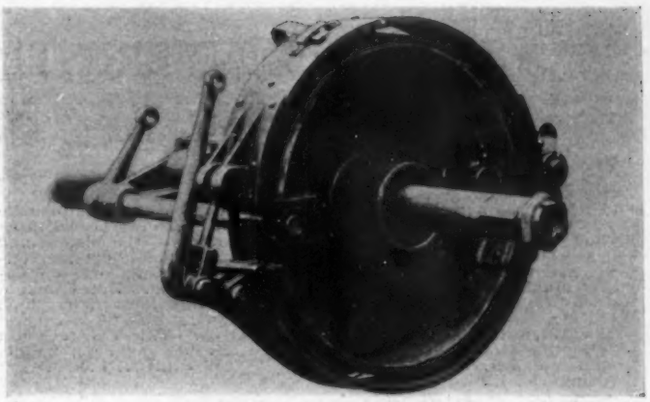
The rear axle is of the live type, and is ground accurately to size and encased in a seamless tubular supporting axle, both being of high grade steel. The wheel ends of the live axle are squared, fitting into squared recesses of the hub, thus doing away with the use of keys or similar fastening and eliminating the possibility

of trouble at this vital point of the drive. Four sets of roller bearings and a large ball thrust bearing reduce friction to a minimum. The rear axle supporting tube is securely fastened to the frame by means of two substantially proportioned radius rods, relieving the springs of all driving stresses. Both the bevel gears and differential are securely encased and run in an oil bath. The universal joints are made of specially hardened steel and are of unusual length, though the duty imposed upon them is light, owing to the close alignment of the various links in the transmission. The upper cardan joint is of the telescoping type to allow for longitudinal movement. Both joints are securely encased and packed with heavy grease sufficient for a run of several hundred miles. Annealed steel of channel section is used for the frame, while the front axle is of I-beam section, the wheelbase being 110 inches and the tread standard. The body is of wood designed on lines that have made the Autocar distinctive in this respect. The mudguards are of light sheet metal, and ample precaution has been taken against rattling. Semi-elliptic springs of ample length on front and rear constitute the suspension, while the running gear is comprised of Midgely 12-spoke all-steel artillery wheels of reinforced construction. Acting on drums attached to the rear wheels are the two sets of brakes, one of the internal expanding type—the service brake—and the other external contracting for the emergency. The wheels are 34 inches in diameter, are shod with four-inch tires front and rear, Hartford Dunlops being supplied unless otherwise specified. With equipment consisting of two large gas headlights and generator, two oil headlights and tail light, horn, tools, tire-repair outfit, extra spark plugs, etc., the new Type XIV lists at $3,000.

The Runabout for 1907.

The Type XV Autocar is the runabout for 1907, and is the result of ten years' work in striving by means of elimination and refinement to produce the ideal runabout. It is constructed of the same high grade of materials and the same class of skilled workmanship is employed in its construction as in the case of the higher powered car. The fact that it is the only low-powered runabout equipped with a ball-bearing sliding-gear transmission places it in a class by itself. Although its motor is of the two-cylinder horizontal opposed type, the placing of the power plant, as well as its various essentials, is in accordance with lines laid down for cars having multi-cylindered motors.

The same plan of casting is followed as in the larger car, in that the cylinders, water jackets and valve pockets are made integral, the pistons and rings, as well as the cylinders, being ground accurately to size. Except for the fact that it is smaller in size and its shafts are mounted on ball bearings, the transmission is identical with that employed on the Type XIV touring car. In-

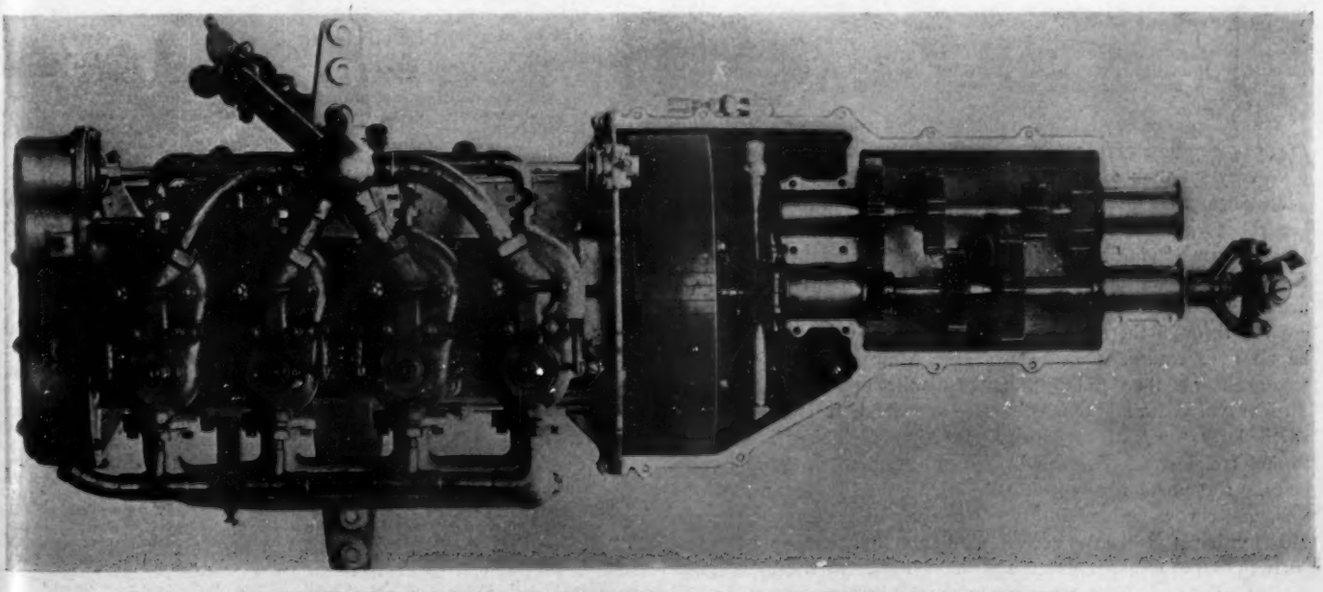


SERVICE AND EMERGENCY BRAKES EMPLOYED ON BOTH TYPES.

stead of a stock carbureter, the Autocar patented type is employed on the motor. Ignition is by means of a set of accumulators, the timer lying horizontally on the end of the camshaft that protrudes forward through the crankcase. Immediately beneath this, and in a similarly accessible position, is the centrifugal water pump connected to the tubular fin radiator slung from the transverse forward brace of the frame. No fan is employed, as the radiator is so situated that the wind may pass directly through.

The same methods of valve placing and valve operation as employed on the heavier cars are followed, and in other respects the motor is practically the same throughout as the four-cylinder motor. In numerous other features of design the same high standards as have been adopted for the car selling at more than double the price have been followed in the construction of the runabout. Thus the completely-enclosed unit type of power plant hung on a three-point suspenson with a ball-bearing sliding-gear transmission giving three speeds and reverse, shaft drive with heavy universal joints, tubular-encased rear live axle and two sets of brakes working on the driving wheel hubs, are features that easily place this little car on a plane far above that usually to be found by the motorist who is in the market for a light but powerful two-seated vehicle.

Semi-elliptic springs in front, with full elliptics in the rear, constitute the suspension, while the running gear comprises the same type of Midgely 12-spoke all-steel wheels previously referred to. The wheelbase is 81 1-2 inches and the tread standard, while the tire equipment consists of 30x3-inch tires rear and front, Hartford Dunlops also being supplied in this case unless otherwise specified. With an equipment comprising two oil headlights, taillight, horn and tools, the new Autocar Type XV lists at $1,200.



PLAN VIEW UNIT POWER PLANT CONSTRUCTION AND TRANSMISSION, AUTOCAR TYPE XIV

LETTERS INTERESTING AND INSTRUCTIVE

The Use of "Breathers" on Crankcases.

Editor THE AUTOMOBILE:

[497.]—Is it too much to ask that through the columns of "The Automobile" you give me an explanation of the purpose of the "breathers" so generally applied to the crank cases of automobile engines? I am told that they are in some manner necessitated because of the pumping action of the underside of the piston, and can see how this would be so in the case of a single-cylinder engine, a double-cylinder engine with both connecting rods on opposite cranks, or with any analogous construction. But I do not see why they are applied to four-cylinder vertical motors, in which the displacement of the two downwardly-moving pistons is exactly compensated for by the other two going up. This may seem a very simple proposition to an expert, but I must say I am unable to understand it. WALLACE F. LONG.

Springfield, Ill.

There are a variety of reasons for the use of the device to which you refer. It is obvious that it would be very bad for any variations in pressure within the crankcase to find relief by working air in and out through the joints of the case, since this would lead quickly to serious leaks, through which oil would escape and dust be drawn in. Consequently, it is by all means the better plan to provide a "breather" to prevent the working open of other points, while at the same time straining out dust and dirt that otherwise might find entry to the crankcase. The causes for a lack of equilibrium between the interior of a crankcase and the atmosphere outside are several. Upon starting an engine, for instance, the air within the crankcase commences to receive heat, with the result that it must expand or set up an appreciable pressure. Besides this, it is not a fact that the downwardly-moving pistons in a multicylinder engine exactly compensate for the upwardly-moving ones, because the angularity of the connecting rods causes the pistons in the upper half of their stroke to move materially faster than they do in traversing the lower half of their stroke. One of the chief reasons for the use of relief devices in the crankcases, according to some manufacturers, is the leakage past the pistons. Even with the best-fitted piston rings there is likely to be a constant though slight leakage of gases from the combustion chamber to the crankcase during the compression, explosion, and part of the exhaust strokes. This has the effect of gradually increasing the volume of gas within the crankcase, and results in the necessity for letting it out.

Rotary Valves or Poppet Valves.

Editor THE AUTOMOBILE:

[498.]—At the automobile show just held in the Grand Central Palace, in New York City, at one of the stands there was exhibited a gasoline engine with a very simple and ingenious appearing rotary valve. Because of its perfectly positive action, and its obvious insusceptibility to various kinds of derangement to which the more common poppet valve is susceptible, I was very much taken with the new construction, and would like to have further information concerning it. Has this type of valve been used enough to prove its merits and demerits, and in what respects is it most criticised by the engineers who refuse to use it? Is the wear on it very bad, or are its cooling and lubrication difficult?

Akron, Ohio. J. G. PUTNAM.

Rotary valves have found considerable application to stationary gas engines, and, when properly designed, can be made to give very satisfactory service. So far, preference seems to have been given to those types in which the valve and its seat are conical, to provide ready means of taking up wear. The valve you refer to having seen at the show is adjusted by a springing together of parts of the cylinder casting itself, so as to constrict around the rotating portion a split bronze bushing. With water cooling through the center, as applied to this valve, there should be no overheating, while proper lubrication should not be any more difficult than the lubrication of the cylinder and piston. Similar valves are extensively used on the best steam engines, particularly those of the Corliss type, in which they are rocked to and fro, instead of rotated. An objection to the rotary valve is that the ports through it necessarily trap a portion of the fuel, and throw it away into the outer air at the commencement of the exhaust stroke, while in a similar manner trapping the last portion of the exhaust gases and returning it to the cylinder at the beginning of the suction stroke.

The Difference Between Carbon and Alloy Steels.

Editor THE AUTOMOBILE:

[499.]—What are the distinguishing characteristics of carbon and alloy steels, and why is there so much talk concerning the latter being superior to any steels made in this country? Is there no alloy steel produced in the United States, and, if not, why not? Is it not generally supposed that the United States is pre-eminent in the steel industry? JOSE SILVA.

Tucson, Arizona.

Carbon steel is steel of the ordinary kind, consisting of iron containing a smaller percentage of carbon than is contained in castiron. Alloy steels are steels in which the carbon content is as a rule very small and in which there is a percentage of one or more of the rarer metals—usually nickel, chromium, vanadium, tungsten, manganese, etc. The effect of alloying these metals with the steel is to produce greater strength and resisting qualities than it is possible to secure with even the best grades of carbon steel. Steel production in the United States has been directed chiefly toward the output of tremendous quantities of the lower-grade carbon steels, such as structural shapes, steel rails, etc. Very little attention has been paid to the effect of alloying with other metals, with the result that this line of research—involving perhaps more of chemical science than it does of metallurgy—has been almost monopolized by the German and French scientists. At the present time vigorous efforts are afoot in this country to dispute old-world supremacy in this field, and before another year is passed it is probable that it will have ceased to exist. It would hardly have lasted as long as it has were it not for the American steelmakers' preference for large orders of average quality over small orders of special quality.

The Old Trouble of Preignition.

Editor THE AUTOMOBILE:

[500.]—What is the reason for an air-cooled engine, when the switch is shut off, failing to stop firing? I always had supposed that this was due to the heat of the cylinder walls, but some of my friends tell me it may even occur for some time after the fuel is cut off also, which makes the proposition seem rather mysterious.

Peru, Ind. CLIFF BANNISTER.

The difficulty can be due only to preignition. Preignition does not always occur from excessively-hot cylinder walls, being rather more likely to occur from some hot projecting point or carbon deposit within the cylinder. If a motor continues to run after the fuel and ignition both are shut off it simply means that there is enough gasoline in the float chamber of the carbureter to last a moment or so, or that the lubricating oil is being vaporized by an excessive heat, in which case it serves very readily as a fuel.

Rewiring an Old Car.

Editor THE AUTOMOBILE:

[501.]—Please send me further information along the lines covered in the concluding article on "How to Improve an Old Car," which appeared in "The Automobile," issue of November 15. I am rewiring my air-cooled touring car with heavy insulated wire, single-strand, and running wire through fiber non-conducting tubes. Do you think this will give best results? J. M. WATKINS.

Mt. Carmel, Pa.

From the brief outline you give of the methods you are applying in rewiring your car, we judge that you are working along the right lines. Fiber tubes constitute excellent insulation, and have the further advantage that they protect the wires from moisture, which is a prolific cause of short-circuiting. Of course, it is necessary that you take great care not to alter the plan of the circuits, so as not to derange the whole system of ignition.

One Carbureter or More.

Editor THE AUTOMOBILE:

[502.]—I have a two-cylinder car—horizontal-opposed motor—that at present is equipped with two carbureters, one for each cylinder. The 1907 cars of the same make have one carbureter, and I desire to change mine to the same construction, because of the difficulty of keeping the two carbureters adjusted the same. What I wish to know is whether I need a carbureter of larger capacity, on account of the double demand upon it, or whether the present-size carbureter can be made to do. Also, what precautions are to be observed in regard to the piping, if one carbureter is used?

New York City. MARION F. LANGDON.

The same carbureter as has been used for each cylinder can be used for both, because with the horizontal-opposed motor there is the interval of one full stroke from one suction stroke to another, so that the two cylinders never can take fuel from the carbureter at the same time, or even draw upon it so continuously as to overtax its capacity. All that is necessary in regard to the piping is to have it of ample proportions, especially at bends and corners, which, if very short, should be swelled to larger size; also, have the leads to both cylinders of substantially the same length, so that there will be no possibility of one cylinder being "starved" while the other is overfed.

PEDERSEN OILER PRIZE OF THE VANDERBILT.

Editor THE AUTOMOBILE:

[503.]—From C. G. Shepherd, of Rutland, Ill., comes the following letter to our company in reference to the $100 prize offered to the mechanician of the first car in the Vanderbilt Elimination race which used the Pedersen Oiler.

New York City. L. SPENCER, Manager.

Pedersen Mfg. Co., New York:

In answer to yours (488), in the November 29 issue of "The Automobile," regarding the prize offered cars of the Vanderbilt Elimination race. If your oiler was used on the entire run, and the one removed carried only as an extra, or to replace your oiler in case of failure, and there were no provisions in the rules of the race prohibiting the carrying of extra parts, Haynes is eligible to the prize.

If the oiler of another make was used in connection with yours, or on a portion of the run, or in connection with any device not entirely yours, or a part of the oiler used, of your make, they are not eligible.

While it may be true that no other car carried an extra oiler, it may be that their reason was, that they were acquainted with the one in use on their car and had no reason for doubting its reliability, but at the same time carried other extra parts; if so it was expected and fitting that Haynes carry his old oiler, while trying out a new make. C. G. SHEPHERD.

Rutland, Ill.

THE MAN FROM GEORGIA WANTS TO KNOW.

Editor THE AUTOMOBILE:

[504.]—I would appreciate it very much if you would kindly give me, through your columns, the following information, or as much as is possible for you to give.

Is it a fact that the modern steam automobile deteriorates in value more rapidly than the same grade gasoline car, with the same kind of use? That is, the service and attention being the same in both instances, will the steamer depreciate more rapidly in a given length of time than a gasoline car of same class of machine? I have heard it said that this is true. If so, why is it? To be explicit, will a 1905 model White Steamer be in as good running order after two years' use as a gasoline car of same age and made of same grade material, both having had same care?

And also, can you tell me why it is that everything that is made to be used in connection with automobiles or automobiling, even the most simple device, however unimportant, is always priced so high? Take ordinary jacks, for instance; nearly all auto jacks sell for from $2 to $4, whereas you can buy the same article in a hardware store, calling it wagon jack, for usually $1. It's the same way with tops. I can buy first-class buggy tops for from $10 to $15, but the cheapest auto top is usually $35 to $50. And no better material, either, in the majority of cases. And I see some firm advertising a mirror to be attached to the dash of a car in order to see behind without looking round. The price is $6, and it certainly doesn't look as if there is more than fifty cents worth of material in it. It certainly looks as if the automobile business at the present stage is pretty much inflated in some particulars. Would be pleased to have you comment on above questions.

A tonneau for a Model A Cadillac retails, I believe, for $100. There can hardly be over $10 worth of material in it; $25 would be a good price for one. It seems strange that because anything is made to be used on an automobile it must be sold for from three to five times what it is really worth, doesn't it?

Zebulon, Ga. E. M. POPE.

Steam cars do not depreciate more rapidly than gasoline, providing each has proper care.

The enormous demand for ordinary automobile supplies is so great that manufacturers are getting better prices than in old-established fields.

A direct comparison between tops is not by any means fair, as any accessory to an automobile must be of the very best quality in order to stand the enormous wear and tear. An ordinary buggy top, for instance, does not require anything like the material that goes into an automobile top, and is consequently sold at a very low price. But a really good buggy top cannot be bought for the price you mention.

In the matter of jacks: Automobile jacks are usually made of better material than wagon jacks, being made of steel or aluminum to reduce weight and consequently cost and sell for more money.

This also applies to the mirror, in which case the glass could probably be bought for as low a price as for any other industry, but the setting, the support, must all be provided for, and this must be done in a very substantial manner.

A tonneau to go on to the tail end of a lumber wagon could probably be made for $10. It could not be properly painted or contain the material necessary for automobile service.

THE AUTOMOBILE CALENDAR.

AMERICAN.

Shows.

Jan. 12-19.....—Annual Automobile Show of the Association of Licensed Automobile Manufacturers, Madison Square Garden, New York City.

Jan. 21-28.....—Los Angeles, Cal., Morley's Rink, First Automobile Show of the Automobile Dealers' Association of Southern California.

Feb. 2-9.....—Chicago Automobile Show, Coliseum and First Regiment Armory. S. A. Miles, manager, 7 E. 42d Street, New York City.

Feb. 11-16.....—Detroit, Mich., Sixth Annual Automobile Show, Light Guard Armory, Tri-State Automobile and Sporting Goods Association. E. E. McMasters, manager.

Feb. 18-23.....—Fifth Annual Automobile Show, Buffalo, Convention Hall. D. H. Lewis, manager, Teck Building, Buffalo.

March 9-16.....—Boston Automobile Show, Mechanics Hall and Horticultural Hall, Boston, Automobile Dealers' Association. Chester I. Campbell, manager, 5 Park Square, Boston.

April 6-13.....—Montreal, Canada, Second International Automobile and Sportsman's Exhibition. R. M. Jaffray, manager, 309 W. Notre Dame street.

April 8-13.....—Pittsburg, Pa., First Annual Show of the Pittsburg Automobile Dealers' Association, Duquesne Garden.

Race Meets and Hill Climbs.

Jan. 22-26.....—Ormond-Daytona (Florida) International Race Meet, Florida East Coast Automobile Association.

Motor Boat Races.

Jan. 29-Feb. 1..—Palm Beach, Fla., Annual Races of the Palm Beach Power Boat Association.

June 8.....—670-Mile Ocean Motor Boat Race, New York to Bermuda. Motor Boat Club of America and Royal Bermuda Yacht Club.

Sept. 2-6.....—Jamestown (Va.) Exposition, Motor Boat Races.

FOREIGN.

Shows.

Dec. 7-23.....—Paris, Ninth Annual Salon d'Automobiles, Grand Palais.

Dec. 15.....—Calcutta, India, Exhibition of Automobiles, etc., Automobile Association of Bengal.

Jan. 5-12.....—Dublin Motor Show, Irish Automobile Club.

Jan. 18-26.....—Birmingham (Eng.) Automobile Show.

Jan. 25-Feb. 2..—Liverpool Motor Show, Tournament Hall.

Feb. 1-9.....—London, Crystal Palace Motor Show.

March 7-16.....—London, Olympia Commercial Vehicle and Motor Boat Show.

April 6-13.....—London, Agricultural Hall Motor Show.

Race Meets, Hill Climbs, etc.

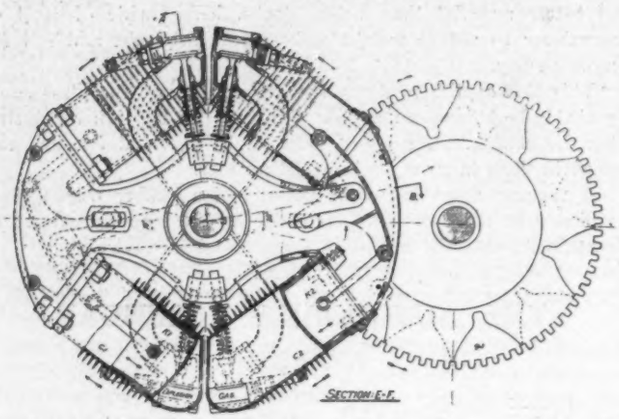
April 21.....—Targa Florio Tour (Sicily), Auto Club of Milan.

May 29-June 1..—Irish Automobile Club Reliability Trials.

June 24-29.....—Scottish Reliability Trial, Scottish Automobile Club.

ANOTHER AIR-COOLED REVOLVING MOTOR.

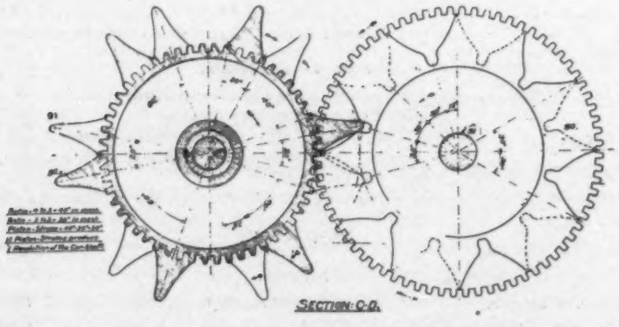
Revolving air-cooled cylinders about a common crankshaft is not new, memory carrying one back some seven years to a five-cylinder engine that was shown working on this method and that is yet in use, but this and subsequent constructions of this type had their pistonrods connected direct to the crankshaft. Differing from



these is the revolving engine designed by M. J. Angermann, of New York City, and shown in detail herewith, inasmuch that, while the cylinders and pistons are arranged concentrically around a center shaft, s, they are connected by gears, g^2—g^3 and g^1—g^2, with a secondary shaft, s^1.

This transmitting mechanism is so arranged that at each new piston stroke the relative greater angular velocity is imparted alternately to the pistons and to the cylinders, this causing cylinders and pistons to rotate in the same direction around their common axis and turning the working shaft s^1 uniformly in one direction. In other words, with the first stroke, the pistons rotate faster than the cylinders and the cylinders are following, with the next stroke the cylinders are going ahead and the pistons are following, and so on indefinitely.

The different angular velocities of cylinders and pistons are obtained by gear transmission of different ratios. If during the piston stroke the proportion of the gear ratios remains constant and changes suddenly at each new stroke, a constant turning moment on the secondary shaft will be obtained by constant pressure in the cylinders and any dead points of the engine will be avoided.



Even if the pressure in the cylinders during the piston stroke diminishes—for instance, by expansion—an almost constant turning moment on the working shaft may be yet obtained by increasing correspondingly the proportion of the gear ratios. As the engine may be so arranged that the sudden change of the gear ratios takes place many times for one revolution of the shaft, s^2, a relatively slow speed of the motor will be obtained without any external gear reduction.

As shown in section E-F an explosion takes place in cylinder c^1, the piston stroke being 20°. Section C-D shows the corresponding position of the transmitting gearwheels.

Gearwheel g^1 is the same as g^2, but in different position.

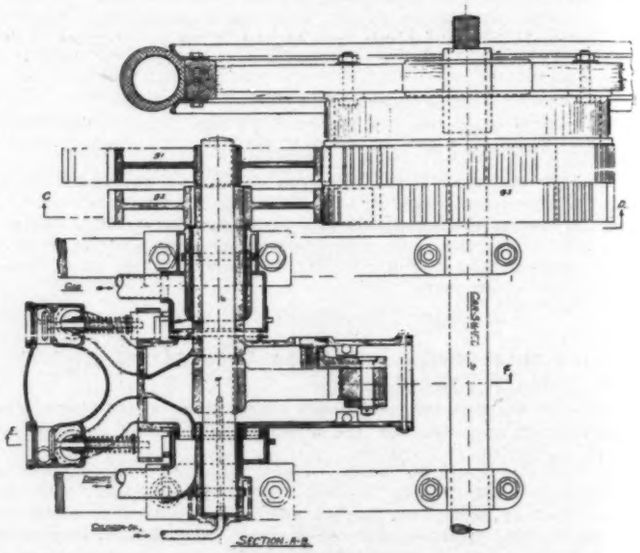
In g^1, g^2, and g^3 are contained two different ratios, ratio 4 to 3 being 40° in mesh and ratio 2 to 3 being 20° in mesh at g^1 and g^3, and each ratio being 30° in mesh at g^2. In section C-D the ratio 4 to 3 of the gearwheel g^1 belonging to the pistons, and the ratio 2 to 3 of the gearwheel g^2 belonging to the cylinders, have just come into mesh.

The pressure of the driving medium in the cylinder c^1 imparts, by the piston k^1 and gearwheels g^1—g^3 to the working shaft s^1 the turning moment 4-3xM acting in the direction of the arrow shown at g^3. Simultaneously the cylinder c^1 imparts by the gearwheels g^2—g^3 to s^1, the turning moment 2-3xM acting in the opposite direction.

The resulting turning moment obtained is (4-3—2-3)xM= 2-3xM.

As g^1 revolves 40°, and g^2 only 20°, the difference = 20° is equal to the stroke of the pistons.

After the explosion in c^1 another explosion occurs in c^2, then g^2 will be in mesh with g^3 by ratio 4 to 3 and g^1 in mesh with g^3 by ratio 2 to 3. This time c^2 imparts to the shaft s^1 by g^3, the turning moment 4-3xM acting in the direction of the arrow shown at g^3, and k^2 imparts 2-3xM acting in the opposite direction, but the



resulting moment, obtained on the working shaft being again 2-3xM, is acting in the same direction as before.

The points brought out by the inventor are that, as the cylinders are in rapid motion, an excellent cooling system is obtained, so that the engine is especially adapted as an explosion motor or compressor. Other advantages are a slow-speed type, a constant turning moment in all positions, and the avoiding of dead points.

ORGANIZE PENNSYLVANIA ROAD SUPERVISORS.

MIDDLETOWN, PA., Dec. 10.—Joseph W. Hunter, Pennsylvania's State Commissioner of Highways, has a plan on foot by which the more than 4,600 road supervisors in the sixty-seven counties of the State will be organized into separate organizations for each county. The object is to get them together for the benefits of the good roads idea. Speaking of the plan, Mr. Hunter says:

"Why should not the road supervisors organize, just the same as the different school boards in the several counties have done? The school boards have their organizations where they talk over the newest ideas in educational matters with resultant advantages to the school system. If the road supervisors in every county are organized along similar lines all the new things in road building will be thoroughly discussed, the work of my department facilitated, and the people will have better roads. In Erie county the supervisors have already organized. While it is my plan to have them organize, I do not take an active part in the work of organization, simply suggesting and outlining the method."

CALIFORNIA'S IDEAL HILL-CLIMBING COURSE UP BOX SPRINGS GRADE AT RIVERSIDE—FROM ORANGES TO SNOWBALLS.

CLIMBING FROM ORANGE BLOSSOMS TO SNOW

By FREDERIC PABST.

LOS ANGELES, CAL., Dec. 1.—Despite weather conditions, which caused a postponement of the annual hill climb up the Box Springs Grade at Riverside from the morning to afternoon, the contest Thanksgiving proved most successful, and, as was predicted, the time for the run was cut down over a minute. It was a race from the orange groves to the fields of snow, but thousands braved the cold winds and the rain to see the cars in their dash up this most excellent hill-climbing course, and it was anything but California-like to see the people huddled about fires at the finish trying to keep warm. Seven classes were run off, fifty-one of the entries taking the word from the starter. This was a remarkable showing, which gives the Riverside climb a national position among a contest of this kind.

The cup offered by the Dealers' Association of Los Angeles to the car making the fastest time was won by the big Stevens-Duryea, with Tommy Pillow at the wheel. The little negro took the big machine up the hill like a bird, and at the first turn the car all but turned on its side. Pillow, instead of cutting the corner, tried to keep in the center of the road, and the wheels on one side went a foot off the ground. The crowd gathered at this point thought it was curtains for the big car, as it momentarily balanced in midair, but Tommy steadied the monster, and away it flew to win first honors.

With rain falling at 8 o'clock, there seemed little chance of a hill climb. At 8:30 a patch of blue sky appeared in the north, and after a consultation the committee announced that if there was no more rain the climb would be held at 1 P. M. There was a slight sprinkle at noon, but the road had been put in such excellent shape it readily shed water and was lightning fast at the time the motorcycles were sent away for the first event.

A hundred yards from the starting point is a full-bearing orange grove. A short distance from the finish the hills were covered with snow. It was truly a strange picture. On the summit of the hill many fires were started, and men and women wrapped themselves in blankets and sat close to the blaze. It was anything but one of those ideal California days, of which we so much delight in telling.

The free-for-all class brought out the fast cars. The race was a close one. First A. T. Dickey sent the Thomas Flyer up in the good time of 5:54. Just when this big touring car was being hailed as a winner along whizzed a 1907 Packard, driven by Homer Paget. It shot by the judges at a sixty-mile-an-hour clip, and when the time—5:50—was announced, it was cheered as the winner. But the Stevens-Duryea "Big Six" was thundering on its way, and in a few minutes it crossed the line with a record of 5:41 1-2, which will stand as the record for the year. William Shroeder took the honors with his Tourist runabout in the open class. He had a big lead over all others, coming within two and seven-tenths seconds of equaling the Stevens-Duryea.

Competition was close in the $2,500 touring car class, but after a well-driven race Lester Patee landed a four-cylinder Cadillac first, with a Buick second, and a Cadillac and a Buick tied for third. In the free-for-all Patee lowered his time 8 seconds.

Out of a field of eight starters Leigh Lynch won the $1,250 and under runabout class with a Buick, making the course in 6:32 1-5. Lynch scored again with a Buick in the $1,600 touring car class. The summary of the climb:

TOURING CARS, OPEN CLASS.

1.	Stevens-Duryea, 70-h.p.; owner, A. B. Daniels	5:41 1-2
2.	Packard, 30-h.p.; owner, D. M. Linnard	5:50
3.	Thomas, 50-h.p.; owner, W. A. Morehouse	5:54
4.	Tourist, 40-h.p.; owner, Auto Vehicle Co	5:59 1-2
5.	Oldsmobile, 40-h.p.; owner, H. O. Harrison	6:20
6.	Cadillac, 30-h.p.; owner, Lee Motor Car Co	6:39 2-5
7.	Cadillac, 30-h.p.; owner, Lee Motor Car Co	6:40 3-5
8.	Mercedes, 50-h.p.; owner, J. S. Speer	8:34 1-5

TOURING CARS, $2,500 AND UNDER.

1.	Cadillac, 30-h.p.; owner, Lee Motor Car Co	6:47 3-4
2.	Buick, 22-h.p.; owner, Western Motor Car Co	6:57
3.	Cadillac, 30-h.p.; owner, Lee Motor Car Co	6:58
4.	Buick, 22-h.p.; owner, Western Motor Car Co	6:58

TOURING CARS, $1,600 AND UNDER.

1.	Buick, 22-h.p.; owner, Western Motor Car Co	7:02 1-5
2.	Masson, 24-h.p.; owner, Lord Co	7:19 1-5
3.	Buick, 22-h.p.; owner, Western Motor Car Co	7:19 1-4
4.	Buick, 22-h.p.; owner, C. H. Judd	7:19 4-5

RUNABOUTS, $1,250 AND UNDER.

1.	Buick, 22-h.p.; owner, Western Motor Car Co	6:32 1-5
2.	Tourist, 20-h.p.; owner, Auto Vehicle Co	7:11 4-5
3.	Mitchell, 18-h.p.; owner, Mitchell Agency	7:14
4.	Jackson, 24-h.p.; owner, L. C. Buckston	7:14 1-4
5.	Reo, 20-h.p.; owner, C. Young	7:24 1-4
6.	Ford, 15-h.p.; owner, Standard Co	7:26 1-2

FREE-FOR-ALL RUNABOUTS.

1.	Tourist, 40-h.p.; owner, Auto Vehicle Co	5:44 1-5
2.	Buick, 22-h.p.; owner, Western Motor Car Co	6:30
3.	Aerocar, 20-h.p.; owner, C. B. Smith	6:45
4.	Elmore, 32-h.p.; owner, A. J. Smith	6:54

RUNABOUTS, $850 OR UNDER.

1.	Ford, 15-h.p.; owner, Standard Motor Car Co	7:50 1-4
2.	Maxwell, 10-h.p.; owner, Maxwell Agency	8:16 4-5

FREE-FOR-ALL MOTORCYCLES.

1.	Marsh, 3-h.p.; owner, H. L. Miller	6:16 1-2
2.	Sheppard, 5-h.p.; owner, A. J. Chase	6:21
3.	Indian; owner, C. W. Risden	6:58 1-2
4.	Harley Davidson, 3 1-4-h.p.; owner, Lord Motor Car Co.	7:33 1-2
5.	Reading Special, 2 1-4-h.p.; owner, C. Young	7:58

PUBLIC MAP SERVICE HAMPERED BY LACK OF FUNDS

The only general plan of detailed map-making yet undertaken in this country is that of the U. S. Geological Survey, which has been engaged since its organization in making a topographic survey and map of the entire country, States and territories alike. Under the plan adopted the entire area is divided into small quadrangles, bounded by certain meridians and parallels, and these quadrangles, which number several thousand, are being separately surveyed and mapped.

The unit of survey is also the unit of publication, and the maps and description of each quadrangle are issued in the form of a folio. When all the folios are completed—which will be several years at best—they will constitute a Geological Atlas of Uncle Sam's vast domain. About one-third of this area, excluding Alaska, has now been thus mapped, and the publication of the folios has followed fairly close the completion of the original plates.

In Great Britain and on the European Continent, outside of Russia, work corresponding to this has been practically accomplished, the different governments carrying it forward almost without regard to expense, as a part of their military policy. In the United States, however, the Geological Survey is simply a great Federal Enterprise, without any apparent urgency or need of special care by Congress. To this fact, and to the demand for these maps which the automobile has unexpectedly developed, is due an inefficiency in the service which is gradually undermining the purpose which the work was originally intended to serve.

The comprehensive nature of the Geological Survey makes it certain that nothing like it would pay as a private enterprise. For that reason the government has a natural monopoly of these maps; and anything happening either to interfere with the progress of the original work or to prevent the issue (or reissue) of the plates as required by a natural demand, is a real inconvenience. Now this is exactly the condition in which the Survey finds itself to-day through the peculiar legislation under which the department is obliged to do its work.

The annual appropriation for engraving and printing these maps is $100,000, and the moneys received through the sales are turned into the Treasury of the United States instead of reverting back, as they should, to the appropriation. Sales have grown to such proportions that under present conditions they are now acting as a decided drain upon the resources of the Engraving Division. In other words, the demand for maps has grown so great that the cost for time and material required to print them is seriously affecting the production of the maps; that is, the original engraving and preparation of the stones.

It is readily seen that the more maps the department issues the less money is left for salaries, which must necessarily be paid to the men producing the maps. It is now well known that this has come to a point where there is an overbalancing to such an extent that some specific action must be taken to provide against depleting the resources of the Engraving Division. As already stated, the appropriation is $100,000. The department employs something like 90 people, purchasing copper plates, stones, inks, paper, presses, etc., out of that sum. Consequently there is a necessary economy in the map production, and this is done by reduction in the amount of printing.

The Director of the Survey has for some time petitioned Congress to permit the proceeds from the sales of these maps to be turned back to the appropriation from which the money is expended, but he has had no success thus far.

If this were done, not only could the Survey extend its original work much more rapidly, but folios out of print could be reprinted, so that the stock could always be up to date and available. As it is now, enough of the folios are out of print—that is, the original stock exhausted—to make it practically impossible for one to order a consecutive set covering any section.

If the Survey does send one of these stones to press for a new edition, it must provide all the stock and work for same out of its appropriation, while every dollar of the returns go back into the U. S. Treasury. This is what the country boy calls "working for nothing and boarding yourself." Theoretically it would be all right were the appropriation large enough to meet the demands of the expanding work; but in actual fact no business could be run satisfactorily on such a basis.

The item for printing geological maps, as it now stands in the Sundry Civil Bill is as follows:

"For engraving and printing the geological maps of the United States, one hundred thousand dollars; The Director of the Geological Survey shall, if the regular map work of the Survey is in no wise interfered with thereby, hereafter furnish to any person, concern, institution, State or foreign government, that shall pay in advance the whole cost thereof with ten per centum added, transfers or copies of any cartographic or other engraved or lithographic data in the division of engraving and printing of the Survey, and the moneys received by the Director for such transfers or copies shall be deposited in the Treasury."

The closing sentence should read as follows: and the moneys received by the Director for such transfers or copies shall be deposited in the Treasury to the credit of the appropriation for engraving and printing the geological maps of the United States. The moneys received by the Director from the sales of topographic and other maps printed by the Geological Survey, shall be deposited in the Treasury of the United States to the credit of the appropriation for engraving and printing the geological maps of the United States."

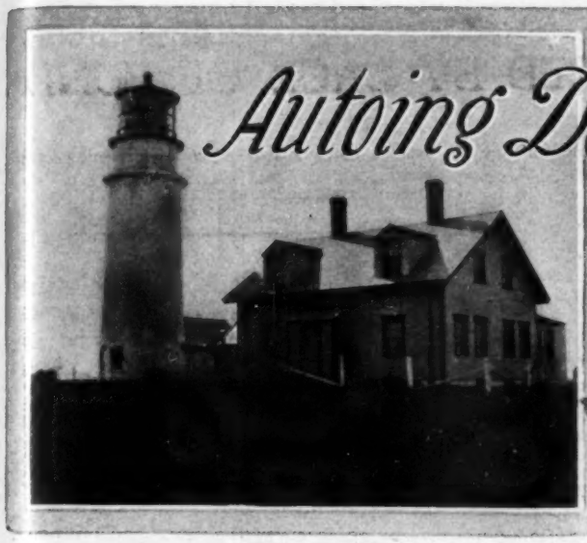
If this were done, not only would the entire work be placed upon a business-like basis, but progress could be made in new channels that are now closed because of the narrow limitations within which the department must act. Readers of THE AUTOMOBILE will remember, for example, the discussion and somewhat extensive correspondence published within the past year upon the suggestion advanced by Augustus Post, of the A. A. A. Touring Committee, to indicate on the government maps the roads suitable for road travel.

Although it is impossible for any public service of this comprehensive character to keep abreast of the changes going on in thousands of localities, as this Survey extends it becomes the final authority on all matters such as distances, directions, etc.; and it is a source of reference beyond compare. The inexpensive form in which the maps come makes up for the relatively small territory covered by a single sheet. The sheets are sold at five cents each when fewer than 100 copies are purchased, but when they are ordered in lots of 100 or more, whether of the same sheet or of different sheets, the price is three cents each—raised from two cents apiece about a year ago. The order may be given for that many copies of one sheet only or for that many different sheets, and, unless otherwise stated, this discount will apply also to special, general and combined maps which may be included in the order.

The areas already mapped are widely scattered, nearly every State being represented. As already stated, about 1,600 sheets have been engraved and printed; they are tabulated by States in a pamphlet catalogue, which will be sent free on request. This makes it possible for anyone to discover whether or not a particular territory has been surveyed and printed. In case of doubt as to any distance or direction, reference to the proper sheet—if published—will make the matter clear, and sketches made from such data will be the more authoritative. It is to be seriously regretted that a work of this character should be hampered by lack of funds; certainly our representatives in Congress should bestir themselves in its behalf in order that an appropriation consistent with the magnitude of the work be made.

Autoing Down Cape Cod Way

by Mrs. A. Sherman Hitchcock.



HIGHLAND OR OLD CAPE LIGHT NEAR TRURO.

TO the autoing tourist there is no more attractive or interesting trip in beautiful New England than the one down quaint Cape Cod, where one finds a charming and picturesque country—varied from the placidity of rural loveliness to the restlessness of the broad Atlantic. Romantic and picturesque, it is filled with memories of the past, and interesting it has always been since the early days, when it was settled by the Pilgrim fathers in that wild winter of 1620-21.

Leaving Providence by way of Washington bridge and East Providence, we followed the road leading to Taunton, Mass., finding it for the greater part very good and the country a pleasing one. Departing from Taunton, we traveled on to Middleboro over good roads, and upon leaving that village we find the finest macadam for about twelve miles. From then on into Wareham the roads are in poor condition, and are of a soft, black dirt peculiar to that immediate vicinity. Wareham is an odd sleepy little town—the march of time and events have apparently not altered the simple and quiet manner of living. We crossed the Wareham river, and a short spin over a fine highway brought us to Onset, a small place abounding with gaiety and life through a brief summer season, but as dead as the proverbial doornail the remainder of the year. Beautiful Onset bay lies directly in front, with its many lovely islands, upon which are built fine summer homes. Everything touched with nature's inimitable grace, the scenic beauty charms and fascinates.

Proceeding onward we speed along and soon reach Buzzards Bay, a village consisting of a very modest structure dignified by the name of hotel, a post-office, railroad station, a few unassuming houses and some small shops. The real point of interest in this place is the fact that the summer homes of Ex-President Cleveland and the late Joseph Jefferson are located near by, although not near each other and very different from point of view and architectural design. Both houses are in large pine grove estates and set back some distance from the highway, so that no view of either place can be obtained without entering the gates and traveling some little distance.

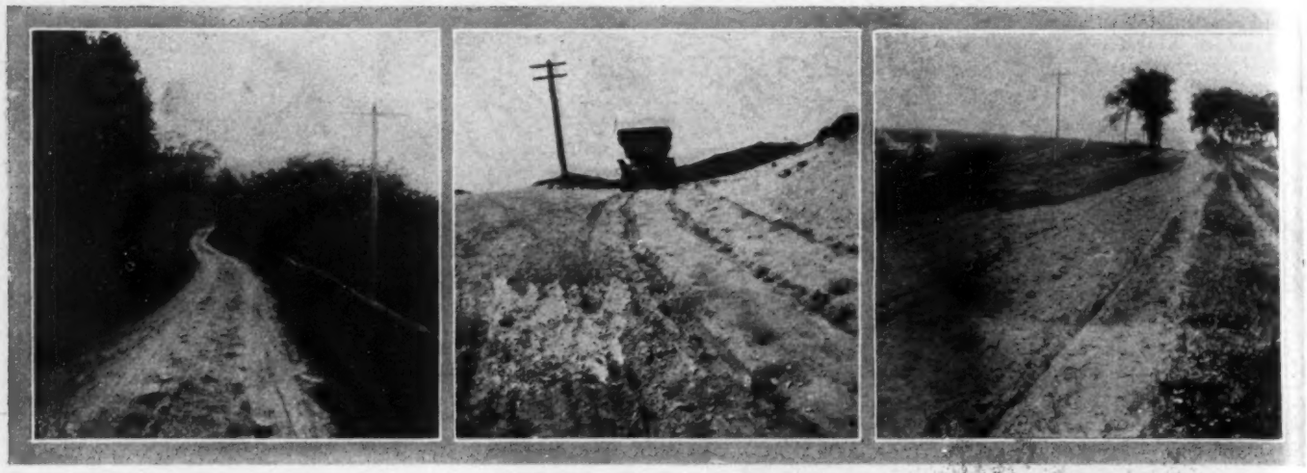
There are some charming and interesting drives of short distance from Buzzards Bay. Monument Beach, Pocasset and Yarmouth are near by, while Falmouth and Woods Hole can easily be visited if the tourist so desires. Continuing onward we passed over roads that are only traveled by horse or motor, as no trolleys are to be found on the Cape after leaving Buzzards Bay. Over the finest macadam roads we passed through an exquisite country, from richly wooded hills to beautiful, tranquil valleys, with little houses occasionally nestled among the trees. Nature has done much for Cape Cod, giving it a luxuriant growth of trees and flowers, a delightful climate, beautiful blue waters for life afloat, and some of the most picturesque scenery imaginable. We passed through some very pretty, very sleepy little villages, all typically New England.

Sandwich—where the greater part of the town consists of a huge graveyard—is the place where the town authorities are so eager to arrest and fine the automobiling fraternity, that it is only necessary to keep moving to assure being accosted by the codfish-fed and clam-digging constable. We passed through Centerville, Osterville and Barnstable, and reached Hyannis, where we had decided to spend the night. We found most com-

IYANOUGH HOUSE AT HYANNIS MASS.

"YE OLDE INNE" AT HYANNIS

NEW CENTRAL HOUSE, PROVINCETOWN.



THE ROAD NEAR SANDWICH. BETWEEN ORLEANS AND WELLFLEET. SANDY ROAD NEAR EASTHAM.

fortable quarters at the Iyanough House and spent a part of the evening inspecting the village, which has delightfully shady and well-kept streets. All the country adjacent is noted for its fine cranberries, thousands of pickers being employed during the berry season.

The following morning we started on our journey, leaving the hotel about 10 o'clock. We were told that on account of very bad sand the probabilities were we could not reach Provincetown, that no automobile had ever been able to do it, although several had tried and failed. We decided, however, to go ahead and find out for ourselves, following the road through West Yarmouth and Brewster to Orleans, and finding the best of roads and a most lovely country. At Brewster, standing in close proximity to the water's edge, are built many palatial summer homes. At Orleans we were again told that we should be unable to go on very much farther, as the roads were impassable for an automobile, owing to their sandy condition. Just after leaving Orleans we found their statements verified, as far as the road conditions were concerned, as they were indeed very bad and the sand was very deep, but we encountered no difficulty in traveling them, except that a diminution of speed was necessary. At Eastham we lost our way, and, following the directions given us by a native, we found ourselves traveling the worst road we have ever encountered. It was very rough and very sandy, and kept growing worse and worse until it finally became like a mere path through a literally deserted country. We had about decided to turn back to Eastham, as it seemed almost impossible that we were on the right road, when a small house in the distance rewarded our persistence, and we decided to make inquiries there. Upon reaching the place the entire family rushed from the house into the highway. Their faces denoted surprise and consternation and we were informed we were the first automobilists who had ever been over that road.

Following their directions, we soon crossed over to another road, which, although far from good, was splendid in comparison to the one we had left. Shortly after we reached a refreshing stretch of macadam, which lasted until we reached Wellfleet, one of the prettiest villages on the Cape, with a beautiful harbor and a great profusion of marine loveliness. Near here is the Marconi wireless experimental station. Between Wellfleet and Truro we drove over some of the best and some of the worst of roads. After a fine stretch of macadam we would come upon a sandy road which was almost impassable.

Through this part of the Cape the scenery is magnificent. It is an everchanging world in itself, exquisite, glorious and beautiful. It fascinates the beholder, and from the luxuriant valleys to the hill summits, where one gazes upon a vast panorama of nature's pictures, certainly no fairer sight can greet the eye, and the invigorating breeze from the Atlantic blends with the balmy air from the inland pines. Near Truro is Highland, or Old Cape light, the light which is first sighted by steamers from Europe bound for Boston. It is one of the highest lights on the coast. We were shown through and found it of considerable interest, although the climb to the top was a difficult and dizzy one. We sped on from this point over a finely macadamized highway, which came nearer and nearer the shore, until we were directly upon it, and after a short ride we reached Provincetown, the end of Cape Cod.

Provincetown is a little old town. Its chief thoroughfare is almost narrow enough to belong to the most ancient sections of

EX-PRESIDENT'S HOME—"GRAY GABLES." RICHARD HARDING DAVIS' HOME. HOME OF LATE JOSEPH JEFFERSON.

a Spanish city or to serve as a scene in a Shakespearean play. The quaint old town has been an interesting point since 1620, when the Puritans in the *Mayflower* entered Cape Cod bay, and where the compact or constitution of government was signed by the Pilgrims. In front of the antiquated old town hall there is a memorial tablet erected bearing an inscription to this effect, and on the other side is the text of the compact with the names of the signers. The native residents of Provincetown are the product of a sturdy New England ancestry. We made our headquarters at the New Central House, where we found good accommodations.

Our homeward journey was made over the same roads until we reached Wareham, where we took the road to the left leading up a short, steep hill, and came by another route, which gave us roads of the greatest perfection. The first village after leaving Wareham that we arrive at is Marion, a very pretty place on an arm of Buzzards Bay. Tabor Academy is located here and there are many summer homes of noted people. Richard Harding Davis has for fifteen years occupied one cottage, where nearly all his successful stories and novels have been written. The old weather-beaten house which Charles Dana Gibson used to occupy is still there. It was in this modest little cottage that the Gibson girl was created. Miss Ethel Barrymore, the actress, has a charming and modern summer home here. Finley Peter Dunne, the creator of "Mr. Dooley," and John Fox, Jr., the author of "The Little Shepherd of Kingdom Come," are others of note who have homes in Marion. Farther on we reach Mattapoisett, another lovely village by the sea, and a short spin brings us to Fairhaven, the home of H. H. Rogers, the Standard Oil magnate; then we drive over the finely constructed Fairhaven bridge, one mile in length, and reach New Bedford over a road as smooth as a floor. From New Bedford to Fall River, a distance of thirteen miles, the road is in a state of perfection. Fall River, which is a typical mill city, can be mentioned as having the roughest roads of any city we have passed through; the roads throughout are of the very roughest cobblestone. From Fall River we journey on, passing through Warren and Barrington over good roads and reach Providence, feeling well satisfied that we have had the pleasure of exploring one of the most delightful portions of the East, and the manner of traveling which proves most enjoyable and satisfying is by automobile.

ROAD FROM THE ATLANTIC TO THE PACIFIC.

Among the California visitors at the Palace Show was Leon T. Shettler, of Los Angeles. Mr. Shettler is an ardent champion of a cross-continent national highway. Asked what the situation is in the trans-Mississippi section, Mr. Shettler said:

"Autoing has done more for securing good roads in Southern California than any other one factor. There is now a concerted movement among the most progressive and influential autoists and business men of Southern California to procure federal and State co-operation for the purpose of laying out, building and maintaining a first-class continuous highway across the continent, so that anyone desiring to tour from New York to the Pacific Coast in a horse-drawn vehicle or motor car could do so without being seriously handicapped for want of good roads, as is now the case. The scheme is to make it a national thoroughfare under federal supervision and State co-operation, the national government to defray one-half the expense while the other half is to be borne by the respective States through which the road would be built."

G. H. LOWE CO., AEROCAR NEW ENGLANDERS.

BOSTON, Dec. 10.—The Aerocar for New England will be handled by the George H. Lowe Company, the head of which has been identified with automobiling since its earlier stages. J. P. Coghlin, president of the Worcester Automobile Club, is the treasurer of the new concern, which starts out with a most promising future.

WHITE STEAM TRUCK CLIMBING 10-PER CENT. GRADE.

WHITE STEAM TRUCK DID THE MOVING.

In a quiet way the White Company, of Cleveland, which manufactures the White steam cars, has learned a great deal about steam trucks by using them in its own work, notably in moving into its new plant. Not caring to convey the impression that it is in the commercial vehicle business, the company has said but little about these machines, but has found them to be exceedingly useful and entirely practical, and they have saved their owners a great deal of time, money, and bother by the quick and satisfactory way in which loads of machinery, and so on, were handled. A long grade running up to 10 per cent. had to be surmounted, and stretches of deep sand had to be ploughed through; but the trucks did the work without hesitation and without trouble of any kind. The trucks were built especially for use in delivering complete autos to freight stations.

OWNER DOESN'T REQUIRE OPERATOR LICENSE.

ALBANY, N. Y., Dec. 10.—County Judge Gregory, of Albany county, has given the Colonie auto-trappers a setback by reversing the decision of Justice of the Peace Schairer, who fined Ralph W. Thompson, of Saratoga, for not having a license as a chauffeur when he was running his own motor vehicle. Not long ago Mr. Thompson, while running his own auto through Loudonville, was held up by two constables of the town of Colonie and brought before Justice Schairer, who fined him $25 for driving his car faster than the law permits. He was then rearrested on the charge of having no chauffeur's license, found guilty and fined $25 more. He resisted this fine, and appealed the case to the county court, where Justice Gregory promptly reversed the decision and told the Justice he had no authority to impose that or any other fine as there was no law requiring the owner of an automobile to take out a license as a chauffeur.

NOVEL ADVERTISING VAN SHOWN AT OLYMPIA SHOW.

WINTER ACTIVITIES OF THE AUTO CLUBS

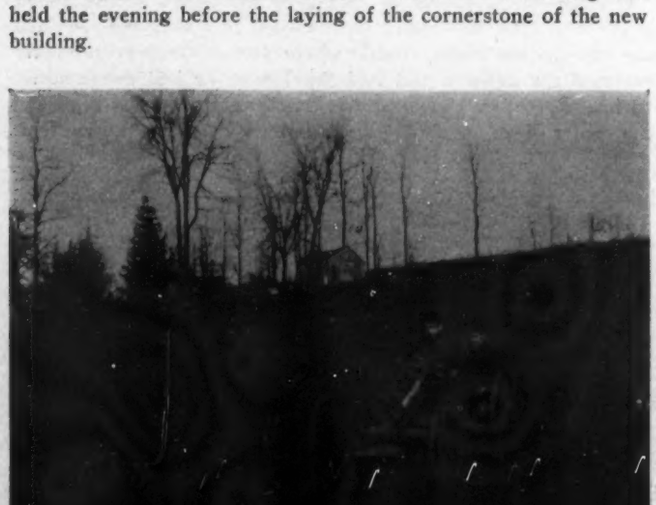
LONG ISLAND CLUB'S ANNUAL BANQUET.

BROOKLYN, Dec. 5.—The sixth annual banquet of the Long Island Automobile Club was the most successful in its history. The election did not have any contest to interfere with the slate, and therefore at 7 o'clock Dr. William P. Richardson, the new president, and the other officers were duly declared elected. The banquet followed, Charles Jerome Edwards, club treasurer, balloon expert, and general hero, figuring in his customary successful rôle of toastmaster. None but Mr. Edwards could have so fittingly introduced Colgate Hoyt, president of the Automobile Club of America; Jefferson De Mont Thompson, chairman of the A. A. A. Racing Board; Alfred Wilmarth, the retiring president; William P. Richardson, the newly-elected presiding officer; S. B. Stevens, president-to-be of the New York Motor Club, and A. R. Pardington, the second vice-president of the Long Island Motor Parkway.

None but Mr. Edwards could have done justice to the ceremony attendant upon the presentation of the numerous club trophies. With joke, story, and reminiscence he presented to H. M. Burns the "mileage mug" donated by John H. Emanuel, Jr., a retiring director. To D. C. Lefferts he handed the touring trophy for driving his car in no less than eleven States. To the new president he tendered the attendance award, offered by A. R. Pardington. Once he faltered when he came to presenting the president's cup. This trophy has taken the title of the president's cup because it was the original gift of the president As Mr. Edwards is the winner this year, he prevailed upon the retiring president to make the presentation. Following the dinner an excellent vaudeville entertainment was provided.

Chicago Automobile Club Sets Membership Limit.

CHICAGO, Dec. 10.—Limitation of membership, as a needful preliminary to the occupancy of the new clubhouse, was determined upon by the Chicago Automobile Club at the annual meeting of the organization at the Grand Pacific Hotel. A limit of 600 was set, with the life membership limited to 50 and the associate membership to 100. As long as the club was without a home membership was permitted to increase without restraint, but with the new building under process of construction the limitation was deemed essential. The annual meeting was held the evening before the laying of the cornerstone of the new building.



A LONG ISLAND PUSHMOBILE: CHARLES W. BILLINGS AT GLEN COVE. This machine claims a downhill record of nearly a mile a minute, which shows that even the pushmobilists think they travel fast.

CHICAGO MOTOR CLUB AFTER SCORCHERS.

CHICAGO, Dec. 10.—Irresponsible chauffeurs and automobile owners are to be hounded from the streets of Chicago. The Chicago Motor Club this week arrayed itself on the side of the law, presenting an implacable front to all autoists who bring

SAN FRANCISCO TO LOS ANGELES: 18 HOURS 13 MINUTES. From the starting place to San Luis Obisco, 295 miles, the Columbia easily kept ahead of the railroad train. If the road had continued good to Los Angeles, the Columbia would have retained the advantage despite the fact that it had to climb four high mountain ranges while the train was favored with tunnels. The photo shows McLoud, the Diamond tire man, inspecting a tire and incidentally drinking a cup of coffee at the same time. Edward Himmelwright is replenishing the water supply.

discredit upon automobiling. The club has offered a standing reward of $50 for the arrest and conviction of any driver who, after becoming involved in an accident, speeds away to escape the grasp of the law.

"Face the music, or face our wrath," is the slogan of the club. Copies of the resolutions, proposed by Secretary George G. Greenburg, which resulted in the offer of the reward, were mailed to every holder of an automobile license in Chicago. The chief of police and the heads of the special park police were notified of the eagerness of the club to co-operate in bringing lawbreakers and trouble-causers to justice.

While in the way of improving conditions for their fellow-motorists, the members of the club appointed a standing committee to ease grievances. Congestion of traffic, pavements in disrepair, police officers who appear guilty of petty persecution, a shortage of gasoline stations or overcharges for services—these are a few of the evils which are likely to be reported to the committee. Thomas Hay, manager of the Ford agency, is chairman, and his associates are Walter Githens, of Githens Brothers, who represent the Oldsmobile and Stearns, and W. J. Mead, the Buick representative.

The club named a committee to confer with committees from other bodies regarding needful legislation. President W. H. Arthur, head of the Chicago Motor Club, heads the committee, and his associates are George G. Greenburg, secretary of the organization; Joseph F. Gunther, manager of the Rambler; F. W. Cornish, Aerocar; C. Y. Knight, Silent Knight.

Automobile Club of Cincinnati's First Season Dinner.

CINCINNATI, O., Dec. 10.—The Automobile Club of Cincinnati to-morrow night will give its first dinner of the season at the Business Men's Club rooms. Asa Goddard, secretary of the Cleveland Automobile Club, and formerly one of the A. A. A. directors, will give an address on club work. The present board of governors of the club consists of Val. Duttenhofer, Jr., president; Dr. L. S. Colter, secretary and treasurer; Dr. A. B. Heyl, George D. Allison, and Huston Durrell.

FRANCE DISCUSSES AND DECLARES FOR RACING

PARIS, Dec. 1.—The anti-racing section of French autoists has recently thrown off its indifference and publicly declared that racing is not only useless in the present state of the automobile industry, but positively injurious to healthy development. M. Charley, the Mercedes agent, who lent his influence to the anti-racing section, has on several occasions declared that Mercedes cars will not again enter in speed contests, and his declarations have been frequently reproduced. *Le Matin*, a Parisian journal, which attempted and did not altogether succeed in organizing the greatest touring competition the world has seen, has been vehement in its campaign against speed, while various rumors have got abroad that such important firms as Brasier and Panhard-Levassor would never again participate in speed events.

Racing men soon rallied to the attack and have obtained expressions of opinion from the great leaders of the French industry. M. René de Knyff, one of the directors of the Panhard firm and president of the A. C. F. Racing Board, declares strongly in favor of racing. M. Brasier states that racing is indispensable for the improvement of automobiles. For practical purposes racing machines are useless, but as a ground of research in gears, valves, resistance of chassis, and general mechanical construction they are invaluable and have a wonderful influence on current types of touring machines. The Brasier firm has announced that it will probably abstain from racing next year; but the personal opinion of the head engineer is that the finest ground for mechanical study is the race track. M. Darracq's opinion on this question is too well known to need repetition. With his characteristic energy he protests against attempts to convince the public that engineers have had enough of speed contests. M. Léon Serpollet, of steam fame, declares that racing is incontestably a school of mechanical progress and a source of public wealth.

Marquis de Dion is of exactly the opposite opinion, declaring that racing has had its day and that the future is for genuine touring competitions. He speaks openly against racing, and denounces the farming out of the Grand Prix, but whenever a vote has to be taken he remains neutral. M. Huillier, a director of the Mors factory, has always maintained, and still believes, that racing does good service in the mechanical development of automobiles. The Mors firm has abstained from racing for several years, but announces that it will compete in next year's Grand Prix.

No opinion has been obtained from M. Clément, but as the Bayard-Clément factory has three racers under construction at present the firm's attitude is clearly indicated. M. Renault, winner of the 1906 Grand Prix, votes for racing. M. Charron, of the C. G. V. firm, shares his opinion. M. Fallot, director of the Peugeot factory, considers it would be a serious mistake to abandon speed tests. M. Gobron, head of the firm bearing his name, has similar views, and Baron de Turckheim, of the Lorraine-Dietrich establishment, concludes that races are a necessity.

Against the Thirty Liters.

French opinion on the conditions of next year's Grand Prix speed contest is decidedly against the allowance of 30 liters of gasoline per 100 kilometers. Several technical writers point out that for three years the average speed has hardly increased, while force and fuel and tire consumption have been enormously augmented. Manufacturers have imagined that to obtain more speed it was only necessary to employ more powerful motors, and have quite ignored the problem of adherence and the resistance of tires. Théry, they declare, owes a large part of his victory in the two Gordon Bennett events to the excellent equilibrium of his car; in the Grand Prix it was proved an advantage not to have a differential, and it is certain that Louis Renault in abolishing these gears was not thinking only of saving weight.

None of this year's Grand Prix racers consumed more than 28 or 29 liters of gasoline per 100 kilometers, while a few went as low as 25 liters. Thus if a 30-liter limit is maintained, we shall next year have machines of 150 horsepower and the new regulations will have missed their object. Charles Faroux sums up the situation as follows: The German Emperor's Cup is for touring machines of 8 liters cylinder capacity. A four-cylinder car, 135 bore, 140 stroke, developing 70 horsepower would just do. It would weigh 1,175 kilos, but with suitably shaped form could be relied on to give 62 miles an hour. There is danger of the result being as follows:

Grand Prix of A. C. F. (speed contest):
Winner, X, on 150-h.p. Y....., at 60 miles an hour.
German Emperor's Cup (touring competition):
Winner, Z, or 40-h.p. (according to catalogue) at 62 miles an hour.

HARD OR SOFT TIRES AND STONES.

What is the best way to pass over a road under repair and covered with stones? It is Michelin, the tire man, who puts the question and declares himself unable to give a satisfactory reply, notwithstanding the various experiments he has made. To pass over stones with the least possible damage to tires two elements have to be considered: inflation and speed. If it should be proved that it is best to pass over stones with the tires pumped hard, or with them rather slack, it would still be difficult to persuade the chauffeur to get down and verify the wheels when he met a stone-strewn section of road. If it were proved that it is best to run over stones with flat tires, few men would go to the trouble of letting the air out and pumping up again when the stony ground was passed. Regarding speed, it is advisable always to consider the length of the stony section. If it is only a few yards, it is preferable to pass over it as fast as possible, on condition that the high speed can be maintained. By this means the period of contact is reduced to a minimum and by reason of the speed there is less adherence of the tires with the stones. If, however, there is a long stretch of stones and it is estimated that they cannot be passed without a considerable slowing down and changing of gears, the lowest gear should be put in and the section crossed at the slowest possible speed. There is doubtless much more to be learned on stone-strewn roads, and Michelin asks automobilists to contribute their personal observations.

WALTER WELLMAN RETURNS TO FRANCE.

Walter Wellman, who intends to find the North Pole with an airship, last week returned to France, but before sailing has some comment to make on the recent criticisms of Commander Peary.

"I see that Commander Peary has said that he has no faith in airships for Arctic exploration," remarked Mr. Wellman. "Well, he and I differ on that subject. All the things that Peary may say will make no difference to me. I believe that the airship is the only solution of the problem. Commander Peary is probably the most experienced sledger who has started in quest of the pole, but he does not know by actual experience the possibilities of the airship. Personally I have no faith in the over-the-ice method of reaching the Far North as it is now carried on."

Discussing his plans, Mr. Wellman said that he would go direct to Paris, where the airship is being lengthened and the car strengthened. During the trials at Spitzbergen the mechanical part of the airship developed defects which made the trip North impossible, and so the real work of exploration was called off until all defects could be remedied.

"I expect to be back here in February," he continued. "I will stay on this side until April perfecting my arrangements and will then go to our headquarters at Spitzbergen. I expect that all will be in readiness and that the start for the Pole will be made in July or the beginning of August."

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Lessons to Be Drawn from the A. C. A. Show. Just what lessons are to be drawn from the brave array of cars that were on exhibition during the week closing Saturday last must naturally differ with the point of view. For instance, the unsophisticated went to see and to marvel thereat, but found little that was sufficiently radical to draw forth even a faint exclamation of surprise; the day of the freak and the bizarre design has gone for good. Those whose show-going dates back a year or two, and who have followed development casually in the interim, went to see the predictions of their favorite prophets fulfilled. They attended expecting to see every other car with many cylinders, with prices on cars as a whole very much reduced, and to look for the much vaunted "poor man's car." But in all of these things were they disappointed. Few multi-cylinder cars materialized—only three more "sixes" than staged at the show held under the same auspices last year, to be exact, with a single specimen of the eight-cylinder type to add a flavor of novelty. Instead of lower prices, cars cost more to-day than they ever did. They are bigger, better, faster, and more reliable, and these qualities have only been increased by the use of vastly more expensive material and better equipment such as the use of larger tires, to quote but a single instance—and these were things that were not wasted on the average seeker for information.

Then there were the "sharps" who went to compare past and present and look to see what the future offered in the way of novelty as embodied in the shape of cars for the coming season that were shown for the first time. Of all those who paid homage to the car during that week probably none found more to interest them than this class, for it was of a nature hidden to all but the trained eye. Slight changes in the design of the motor, accessories, their placing, the arrangement of the component parts of the power plant, transmission, and other technical details of the car were of absorbing interest to the large number of visitors who went to learn as well as to see.

Probably as a whole none of the different classes of visitors were in accord on any one point other than that in its entirety the show itself was a most creditable representation of the American-built automobile in numerous guises and a tasteful setting. To this one other may be added and that is the expedience of holding such an affair at this time instead of deferring it to a period when the attention it requires proves a serious drain on the time of the maker who wishes to devote his every effort to building cars instead of showing them.

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The Great and Growing Need for Road Signs. Autoists who have toured to any considerable extent will doubtless recall many an instance where a road sign has done them a good service—with perhaps now and then a case where it has brought them trouble. On the whole they are an influence for good. Road signs differ, however, just as localities do, and almost always they reflect the special idea or purpose of the man, or business firm, club, or association which put them up.

If there has been in the past any one person more indifferent than any other to road signs, it has been the farmer. Doing nearly all of his own traveling within a few miles of home, this worthy has had little use for these valuable bits of information attached to roadside posts, fences, barns, etc., which to a long-distance traveler in strange localities are nearly indispensable. If someone else will put them up, he will usually tolerate them—unless they get in his way—when they are likely to come down quickly. To the average farmer, the autoist making long trips is a person of wealth and leisure who deserves no special favors in the way of road signs to save errors and expedite pace.

Changes in all these respects will come about in time, of course, especially as the automobile is brought nearer to the needs of rural communities. Once in a while a farmer develops some special interest in erecting road signs. A short time ago, for example, a householder living on the upper end of the main route between Poughkeepsie and Albany wrote to one of the principal garages in the latter city soliciting the placing of a sign on the fork near his house. Asked the reason for this unusual interest, the farmer said he was thoroughly tired of having the sleep of himself and family broken by constant inquiries by touring autoists at night about " which road to take."

In this case the garage keeper was glad to accommodate—and incidentally to do a bit of excellent advertising on his own account. No one can blame the farmer, for the after-dark travel on such a route as the main thoroughfare along the east side of the Hudson river is very large in the aggregate; and to one not knowing the way at a strange fork, the temptation to knock at the nearest house is too great to be easily overcome. And a lot of cars are apt to go by after the honest farmer and his family have buried their day's troubles in sleep.

Some signs easily seen in daylight are hard to find at night, especially by the autoist who travels without sufficient lights, or with lights which cannot be swung around from one dark place to another. Thus a new problem comes up—that of road signs which can be distinguished with fair ease and certainty at night. Whether this will lead to electric signs along the principal highways after the manner of city streets, or whether necessity will develop paints sufficiently luminous to serve that purpose is an interesting speculation.

In the days near at hand when electricity will be about as common in farmhouses as in city homes, may we not expect that the rural genius too much bothered by late-at-night inquiries will take further steps to inform the traveling public of the right way to take? Imagine a sign at some prominent fork kept bright at night by a live wire extended from the farmhouse, reading something like this: "10 miles of Kinderhook": "12 miles to Red Hook." Special: *"Don't wake up the house to ask questions after* 8 P. M."

CHICAGO CLUB'S CORNERSTONE LAID.

CHICAGO, Dec. 8.—The cornerstone of the new Chicago Automobile Club's new house was laid yesterday afternoon with appropriate ceremonies. Mayor Dunne and officials and members participated in the exercises. President Ira M. Cobe introduced Mayor Dunne, who made the principal address of the day.

"The automobile is an indication of prosperity and wealth," said Mayor Dunne. "If this is so, as it undoubtedly is, our city must be in the height of prosperity, judging from the splendid growth and success of the Chicago Automobile Club and the great number of automobiles to be seen about the city. I myself have become interested in the study of the automobile, and have gone so far as to secure several catalogues and pore over their contents. I hoped that I might own a car myself. But I came to see that I must either give up my family or the idea of owning a machine—the cost of maintaining both being too great. So I decided to give up the automobile."

After concluding his remarks the Mayor took the silver trowel and put the mortar to the cornerstone, the latter being lowered into place by the workmen. At this point S. K. Martin demanded the union card of the Mayor. After this ceremony, John Farson, ex-president of the club, was introduced as the man who had been chiefly instrumental in the movement which has made the organization such a distinct success.

ELECTRICAL VEHICLE MAKERS' MEETING.

An event of more significance than appears on the surface was the first regular meeting of the Association of Electrical Vehicle Manufacturers held at the Belmont Hotel, Forty-second street and Park Avenue, during the latter part of show week. The association is the newest in the field, and is the outgrowth of the efforts of a number of the makers of electric vehicles to found an organization to further the interests of this branch of the industry. It is of very recent formation and has been duly incorporated under the laws of the State of New York with the following officers: Col. George Pope, Pope Manufacturing Company, Hartford, Conn., president; George M. Studebaker, Studebaker Automobile Company, South Bend, Ind., vice-president; M. L. Goss, Baker Motor Vehicle Company, Cleveland, O., treasurer, and Robert McA. Lloyd, General Vehicle Company, New York, secretary. The board of directors, in addition to comprising the above named officers, also includes James MacNaughton, The James MacNaughton Company, Buffalo, and J. W. McCrea, The McCrea Motor Truck Company, Cleveland, O.

The meeting was opened with a full attendance of the members by Col. Pope, and was of special importance in that the members of trade generally were invited to attend. Various subjects relating to the electric vehicle and its progress in line with the avowed object of the association were discussed at length, followed by an address by Col. C. H. Luscomb, counsel to the association, on the advantages of organization. In addition to its other objects the association aims to promote uniformity and certainty in the usages and customs of trade, reform abuses, secure freedom from unlawful exactions, settle differences between its members, and generally to advance the interests of electrical vehicle manufacturers.

N. A. A. M. CONTEST COMMITTEE STILL AT WORK.

At last week's meeting of the Executive Committee of the National Association of Automobile Manufacturers, the Contest Committee, to whom had been given the task of drawing up rules for a 1907 endurance tour of some kind, asked for further time before making its report. The committee has another session scheduled for to-day at the association offices in the Transit Building, New York City.

The annual meeting of the N. A. A. M. will be held in New York City, January 16, at 11 o'clock in the morning, possibly at the Victoria Hotel.

HOW MANY SHOWS FOR NEXT YEAR?

Next year's shows became a topic for discussion before the first of the present season was well under way, and as usual Dame Rumor has been busily engaged in outlining what is to be a twelvemonth hence. The one fact conceded by all is that New York offers no one building having sufficient capacity to accommodate all the exhibitors who wish to have space. This, and the fact that the Automobile Club of America has let it be known definitely that it will hold its eighth annual show in the Grand Central Palace next year, are the two items of common knowledge on which a wealth of report has been based. Most of these spring from reputed trade affiliations or trade differences. For instance, an element in the American Motor Car Manufacturers' Association is said to be of the opinion that it has outgrown the stage where it requires any assistance and will promote a show of its own next year. The same is true of the Motor and Accessories Manufacturers, Incorporated, while the commercial and electric vehicle interests consider that they have played second fiddle to the gasoline pleasure car long enough and wish to star on their own stage. The importers are likewise reported to have decided that instead of splitting forces as they have done up to the present, they will combine and hold a show of their own.

AT MILWAUKEE SIR THOMAS LIPTON WAS THE GUEST OF MAYOR BECKER, AN ENTHUSIASTIC AUTOMOBILIST AND POPE-TOLEDO OWNER.

A. C. A. SHOW EXHIBITS WORTHY OF MENTION.

Kilgore Automobile Air Cushion Company, Boston.—The Kilgore air-cushion shock absorbers have been improved for 1907 by fitting a sort of valve plate over the air-holes in the piston. By turning the plate the area of the air passages can be increased or diminished at will, making the device adjustable to cars of any weight. Ball and socket connections have been provided at the ends, so that no harm will be done if the movement of the body of the car is not perpendicular to the axle; no binding can take place, no matter what the direction of movement may be. The device is, generally, the same as the 1906 model, with the addition of these improvements and a better appearance due to the care taken in finishing.

Witherbee Igniter Company, New York.—This concern exhibited samples of the various sizes of storage batteries for explosion engine ignition work, of which an exclusive specialty is made; also small charging outfits for charging the cells from ordinary lighting circuits. With each charging set is included a hydrometer, tube, and syringe, and a voltmeter. Witherbee batteries weigh from ten to thirty-five pounds, and their capacities range from forty ampere hours to eighty ampere hours, at six volts potential. Eight-volt batteries are also made for special demand, though the six-volt battery is commonly used for ignition work. The charging outfits are suitable for direct currents of from 108 to 125 volts.

ALL BELIEVE IN AN EARLY AUTO SHOW

ANYONE who took the trouble to investigate at the Grand Central Palace show could easily convince himself of the satisfactory results obtained by the exhibitors. From all sides came such reports as "Factory output for the season disposed of to agents," "New and satisfactory agencies established all over the country," "Better results than we anticipated," "A well-managed show," and so on, almost indefinitely. There never was and never will be a show or exposition of any kind that will be absolutely perfect, and so there were a few kicks heard here and there. Without exception, however, these referred to minor features, and it is safe to say that on Saturday night there were few really disgruntled exhibitors in the whole tired, homesick, but thoroughly satisfied bunch of automobile men.

Benjamin Briscoe, chairman of the show committee of the American Motor Car Manufacturers' Association, which was identified with the Automobile Club of America in its promotion of the affair, believes the date to be the correct one.

"Of course, the holding of a show the first week in December was a radical thing to do, but its success has proven the wisdom of its advocates. An early show lengthens the selling season, makes the dull season in the automobile business much shorter, and tends to bring about what we all would like to see—the automobile business as an all-year one, and not one of seasons. With cars for use in winter as well as in summer, there should be a steady buying of machines the year round, and this can be helped materially with the early show.

"I do not know of any important manufacturer in the country who did not attend this exhibit or have his representative there. There was no important sporting or trade organization that did not have a meeting during the week, and the agents came from far and near.

"In my opinion, the date is the correct one for another year. Now that the present show is over, makers can return to their factories with a good idea of what is going to become of their output, and with four months to work on the product before the real active selling season begins.

"To the Automobile Club of America should be given great credit for its interest and work in promoting a show open to every manufacturer in the country, a policy which members of our association all advocate."

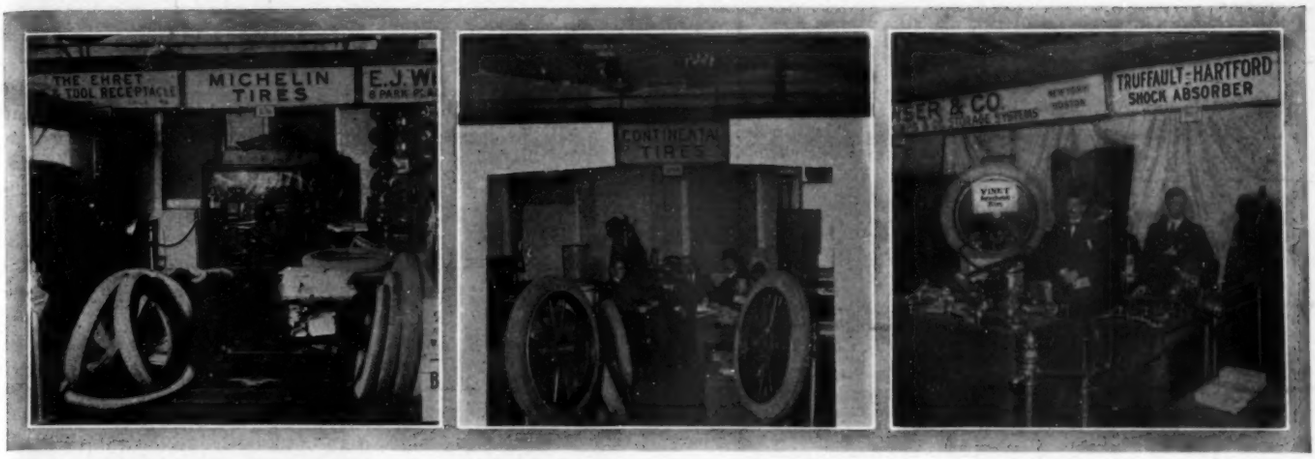
J. B. Bartholomew, of the A. M. C. M. A. show committee, left early in the week for South America, where he is to introduce his machine, opening up a fresh field. Before leaving he expressed himself as well pleased with the prospects of the show. "I believe it will be a good thing for us as well as for other manufacturers," he said, "and that the end of the week will bring a story of big business and better prospects." It was a true prophecy. Toward the end of the week the secretary of the company, G. G. Luthy, said: "This is our third show, and the best one we have exhibited at; we have done just about four times the business we did at the last show."

At the Ford Motor Company's stand, Chairman James Couzens, of the A. M. C. M. A. committee of management, was probably the busiest man in sight; in fact, he was fairly rushed off his feet. "I don't need to say anything," he said. "Look at that mob trying to get at the cars; that's enough for anyone. And they are buying cars hand over fist. The show's all right."

"Well," queried General Manager Al Reeves, when seen on Saturday, "you don't hear much kicking, do you? That's the proof of the pudding. Some people have had to work mighty hard, but not for nothing. It's a pretty good show, taking it all around, and we are well pleased with the results of our labors."

Sales Manager Dixon, of the National Motor Vehicle Company, was warm in his praise of the management of the show. "A whole lot of credit is due to Alfred Reeves," he declared. "No matter how busy he was, he was never too busy to listen to anything anyone had to say, and never too hurried to be courteous. That goes a long way toward helping along a show of this kind. We are well satisfied with the business we have done; nearly all our cars for the coming year have been sold to agents and others, and what we have left will barely fill the odd orders that will come in later."

DURING THE GRAND CENTRAL PALACE SHOW THE SIDE STREETS WERE FILLED WITH DEMONSTRATING CARS.



WHERE THE MICHELIN HELD FORTH. WHERE CONTINENTALS WERE EXHIBITED. THE VINET DETACHABLE RIM.

THE BATTLE OF THE MEDIUM RUNABOUTS.

DETROIT, MICH., Dec. 10.—In spite of the fact that the greater majority of the Detroit automobile magnates were in New York attending the show, last week was by no means a dull one in this city. When he left for the east, Henry Ford, the pioneer of the Detroit trade, who usually sees to it that he has a conspicuous place in the public eye, announced that he had something up his sleeve that would startle somebody. It was scarcely expected, however, that the $500 runabout would again prove the medium. Mr. Ford was isuing a sweeping challenge to all runabouts list-

STAND OF THE WINCHESTER SPEEDOMETER COMPANY.

ing under $1,000 for a test to the death for the title of "best runabout in the world."

This thrill was augmented almost immediately with the counter challenge of the Maxwell, proposing a thorough series of tests embracing speed, endurance, reliability and economy, winding up a transcontinental reliability run from New York to San Francisco or Los Angeles. Spurning to meet the Ford or any other runabout on anything but equal terms, the Maxwell people proposed handicaps proportionate to the prices of the contending cars when such were listed at less than were Maxwells. From what can be learned at the Detroit factory (Mr. Ford is still in the east), the Ford people will immediately accept the Maxwell proposition.

SHOWED HOW A TIRE IS MADE.

At the Palace show the public was given an opportunity to see how a pneumatic tire is made, the Ajax-Grieb Rubber Company having established, as an exhibit, a tire-making plant complete, except for the vulcanizing apparatus. The materials used were Sea Island cotton fabric and fine Para rubber, the latter costing, the manufacturers state, $1.65 a pound in the raw state. The fabric is "frictioned" with rubber, so that every pore is filled, and a single thickness is wrapped around a solid iron core. Over this is wrapped a single thickness of thin rubber, known as "skim," which flows under the heat of vulcanization and fills every interstice. Altogether, three plies each of fabric and skim are applied, and then the bead, previously made of thoroughly cured hard rubber, is applied and the edges of the fabric and skim turned up over it. Next three more layers of fabric and skim are applied, lapping over the bead and securing it to the tire.

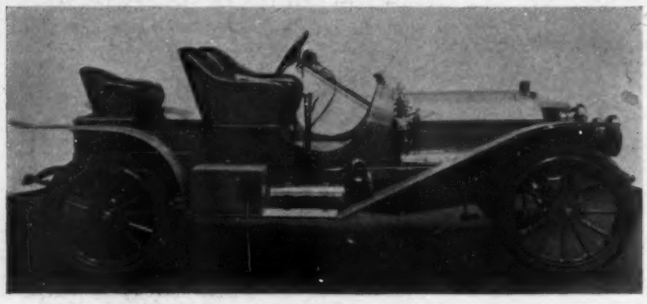
Finally the cushion and facing, which together make up the tread, are applied, and this part of the tire demands the greatest skill and care in every detail of its manufacture, for only the best rubber will properly adhere and stand the hard service imposed upon it. For practical purposes it is, of course, out of the question to use pure Para rubber.

After all the material is in position, the built-up tire is placed in an iron mold, and, under the weight of a powerful press, the curing process is carried on under high steam pressure and heat.

AJAX TIRES WERE PARTIALLY MADE AT THE AJAX STAND.

STODDARD-DAYTON HIGH-POWERED RUNABOUT

Model K Stoddard-Dayton forms the latest addition to that increasingly popular type of car that has come to be known as the high-powered runabout. Contrary to the plan adopted by a

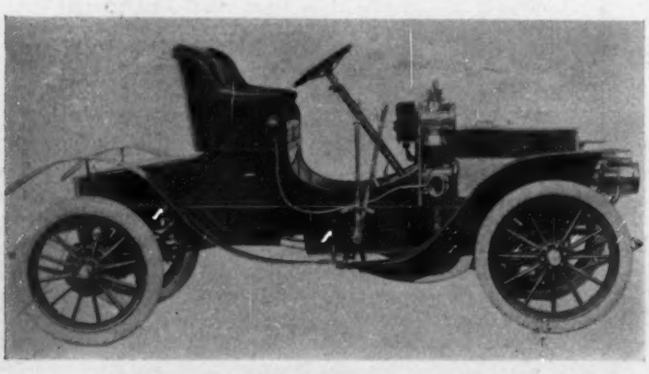


THE NEW MODEL K STODDARD-DAYTON RUNABOUT.

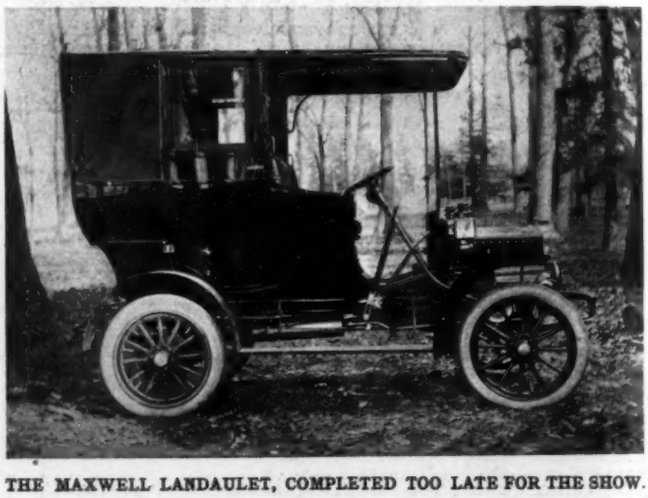
number of makers in adding this type of car to their line for the coming season, the new addition to the Stoddard-Dayton ranks will not be of the convertible class in any sense of the word. Barring the fact that its power plant will be identical with that of the regular touring model to be marketed by this firm during 1907 and known as Model F, it will be a specially designed car throughout. Not being hampered by the limitations imposed by the necessities of a convertible body, it has been possible for the designer to turn out a vehicle that is a typical example of the extremely speedy four-cylinder runabout, as well as one the lines of which are at once indicative of its special classification. As already mentioned, it is equipped with the same 30-35-horsepower motor as the Model F. The wheelbase has been increased to 114 inches by setting the front axle forward to a point well beyond the radiator, while the seats have been set back in order to provide plenty of foot room. This also gives the steering column a rakish angle, and brings the wheel at a very convenient position for handling the car at high speeds. The same high grade of material, as well as the features characteristic of the design of the touring car, have been followed throughout in the design of this new member of the Stoddard-Dayton family. With full equipment and in complete running order the new runabout tips the scales exactly at the 2,000-pound mark. Owing to the extremely high ratio of power to weight which has been possible in this design, the use of a much lower ratio of gearing between the propeller shaft and the rear axle has been found permissible, thus attaining a greatly increased speed capacity. The tires are 34 by 3 1-2 front and 34 by 4 rear.

FRANKLIN SHAFT-DRIVEN RUNABOUT.

In line with their policy of anticipating the needs of their customers the H. H. Franklin Manufacturing Company have just announced an addition to their models for 1907 in the shape of a light, amply-powered, high-speed runabout of the shaft-driven type. This will be known as Model G Shaft-Driven Runabout, and will be equipped with a motor similar to that of the Model G touring car. It is of the four-cylinder air-cooled type rated at 12 horsepower, but in spite of this the car will be capable of doing forty-five miles an hour, as it tips the scales at but 1,250 pounds. These features, the makers believe, form a combination that will exactly meet the requirements of those who have wished to possess a high-class, shaft-driven runabout of exclusive design of light weight and power. The details of construction throughout are those which from long and successful use have become characteristic of Franklin design in all models. Thus the self-finding type of change-speed gear, as well as the same method of emergency-brake operation as employed on the other cars, have been adhered to. With the free hand permissible in the case of a special type the designer has achieved racy and attractive lines by placing the body well back on the chassis, giving plenty of room between the dash and the two comfortable bucket seats. The steering column and levers are given an extra rakish angle, but are so arranged as to not only permit of access to the driver's seat from that side of the car, but also to permit of easy operation. The turtle back is symmetrically designed with pleasing lines, and is readily removable from the flat aluminum deck on which it rests. The wheelbase of the new runabout is 90 inches, and the tread standard, 30x3-inch wheels being fitted forward, and 30x3 1-2-inch rear.



THE NEW 1907 FRANKLIN MODEL G RUNABOUT.



THE MAXWELL LANDAULET, COMPLETED TOO LATE FOR THE SHOW.

MAXWELL'S SUBURBAN LAUDAULET.

One of the additions to the Maxwell line for 1907 which could not be completed in season to take its place with the others of this make at the show in the Grand Central Palace during the past week, is a medium-priced suburban landaulet, for which the makers are of the opinion there is a large and constantly-increasing call. The new addition is a two or four-seated 20-horsepower Maxwell, designed along the same lines that have brought this make of cars such deserved prominence during the past few years. The engine is of the two-cylinder horizontal-opposed type so successfully employed in the other Maxwells, and is placed forward in a transverse position under the hood as usual. The car is rated at 20 horsepower, and in complete running order weighs but 2,215 pounds on an 86-inch wheelbase. A folding tonneau, collapsing to form the usual turtle back deck, but which nevertheless is upholstered in the customary luxurious style, has been added, making the car one particularly adapted for suburban use. The rear axle has been strengthened to carry the extra weight and the gear reduction increased, making the new car as efficient in hill-climbing as the standard touring type.

The Japanese Ambassador, Baron Komura, during the period of his residence in Great Britain, has been elected an honorary member of the Automobile Club, making nine ambassadors now on the honorary membership list.

HOW THE HARBURG RIM IS USED.

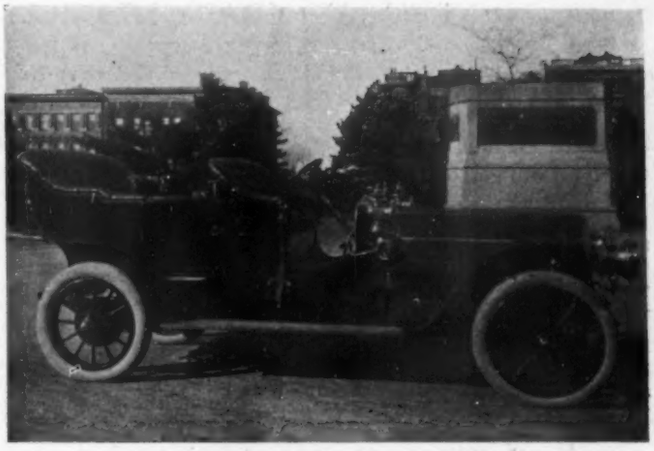
Some time ago the Harburg detachable rim, manufactured by the Harburg Tire Company, of New York, was illustrated by line drawings and technically described in THE AUTOMOBILE. The illustrations here shown, however, convey an idea of the convenience of the device in actual use. When it becomes necessary to change a tire the wheel is jacked up and the nuts that hold the rim are removed by a special magazine wrench that picks up the nuts and stores them away. The rim is then loose and can easily be removed by hand. The new rim, with a fresh tire, is as easily slipped into place, being dropped over the lugs on top and slid in at the bottom. The magazine wrench is then brought into play again, and its use greatly facilitates the tire-changing operation. Each nut is presented in turn, ready to be screwed onto its bolt, and it is only necessary to give the brace a few rapid whirls to send the nut home and tighten it down securely. The whole operation is performed in a very short time, and the chauffeur need not even soil his hands. There are six bolts, with a lug on the rim for each, and when the nuts are drawn up tight the rim is pulled up on a tapering face that wedges it firmly into position and prevents shakiness. It has been found that even if four of the nuts should get adrift the remaining two would hold the rim safely, owing to its peculiar construction. A special tire valve is not needed, the standard type being used. About a minute is said to be the time required for the operation, even when the work is being done by one who has not had experience with this rim. The clips or lugs are hinged so that they can be turned back, and it is not necessary to remove more than four of the nuts owing to this convenient method of construction.

REMOVE NUTS WITH MAGAZINE WRENCH.

SLIP OFF THE OLD TIRE AND RIM.

WHEEL WITH RIM AND TIRE REMOVED.

APPLY NEW RIM AND REPLACE NUTS

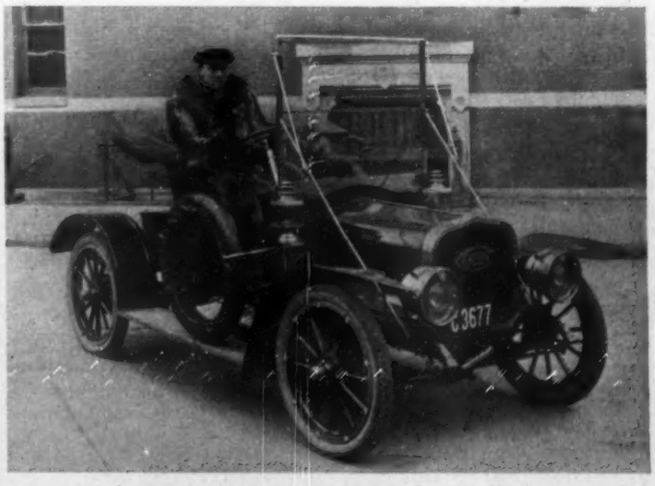


THE EIGHT-CYLINDER AIR-COOLED MARMON, ONE OF THE FEATURES OF THE GRAND CENTRAL PALACE SHOW.

GROWTH OF CORK INSERTS FOR CLUTCHES.

As the result of a series of exhaustive and severe road tests of clutches with cork inserts covering a period of six months, and which were uniformly successful, the Standard Brake Company, 101 West Sixty-sixth street, New York, have finally consummated negotiations to represent the National Brake and Clutch Company, of Boston, Mass., as their selling agents in Metropolitan district territory. The latter company controls various letters patent on the use of cork inserts in friction devices, and in substantiation of their claims for the highly increased efficiency to be gained in this way cite the following list of well-known makers who have adopted cork inserts under license from this company. In every instance the device was subjected to severe road tests, and its efficiency compared with other types.

Autocar Company, Ardmore, Pa.; George N. Pierce Company, Buffalo, N. Y.; E. R. Thomas Motor Company, Buffalo, N. Y.; Knox Automobile Company, Springfield, Mass.; Garford Company, Elyria, O.; Mack Bros. Motor Car Company, Allentown, Pa.; Nordyke & Marmon Company, Indianapolis, Ind.; Rainier Company, New York, N. Y.; Cleveland Motor Car Company, Cleveland, O.; Studebaker Automobile Company, South Bend, Ind.; Northway Motor and Manufacturing Company, Detroit, Mich.; American Machine Manufacturing Company, Detroit, Mich.; Continental Motor Manufacturing Company, Muskegon, Mich.; Dayton Electrical Manufacturing Company, Dayton, O.; Bay State Automobile Company, Boston, Mass.; Imperial Automobile Company, Boston, Mass.



H. J. KOEHLER, THE WELL-KNOWN NEWARK, N. J., DEALER, DRIVING A CORBIN RUNABOUT. HE HAS JUST ADDED THIS AGENCY.

NEWS AND TRADE MISCELLANY.

The Stanley Automobile Company, recently incorporated with $25,000 capital, will locate at Mooreland, Ind., shortly and undertake the production of cars. The directors are J. F. Stanley, J. H. Cory, Eli Holiday and J. E. Rogers.

The National Sales Corporation, 296 Broadway, has recently added the Gaither-Owen carbureters, P.D.Q. tire-repair plugs, and Peugeot rims and chains to their growing list of high grade automobile specialties.

Under the title of the Superior Machine and Tool Company, a company has been organized with $20,000 capital to do a general manufacturing business, and will shortly locate at Kokomo, Ind. The directors are A. P. Weigel, L. Weigel and S. H. Robinson.

The A. W. Gump Automobile Company, Los Angeles, Cal., are seeking the agency of a good two-cylinder shaft-driven runabout to distribute to their agents in California. Manufacturers not now represented on the Pacific Coast, and desirous of entering that territory, may learn full particulars by corresponding with this firm.

The new Pennsylvania State liecnses went into effect December 1. The license tags are red, with white letters and numbers. The fee is $3, and the State Highways Department issues the licenses. Applications are furnished by the Automobile Club of Pittsburg, or can be obtained at any of the local garages. There is much dissatisfaction over the new law.

Lynville, a thriving little village of Giles County, Tennessee, has tabooed automobiles, and, as a result, G. V. Patterson, owner of the only car in that entire section, has sold his machine and surrendered the agency for it. Rather than be voted a public nuisance, Mr. Patterson bowed to the superior will of his fellow citizens, to many of whom the machine was a terror on wheels.

Hammond, Ind., is shortly to have an automobile factory in the shape of the plant of the National and Commercial Manufacturing Company, recently incorporated with $12,000 capital, all of which has been subscribed. While it is said that the company has already decided on the type and style of car which will be made, no announcement will be forthcoming until later. The directors are Clarence Kistlen, L. F. Jones and E. J. Hathaway.

Frank H. Morse, of Rockford, Ill., organizer of the Four-Wheel-Drive Wagon Company, of Milwaukee, Wis., disposed of his holdings in the latter last May and intends to form a new company to build four-wheel-drive wagons under his patent rights, which he claims include the basic patents on this type of wagon.

A complete reorganization of the Federal Motor Car Company, of Indianapolis, has been effected, and the company is known as the Boyd Automobile Company. The location on Kentucky avenue has been abandoned and a three-story and basement building at 417 Massachusetts avenue taken. The new building is equipped with both freight and passenger elevators and has entrance on both Massachusetts avenue and New York street. When ready for occupancy it will be one of the most attractive and best-equipped garages in Indianapolis. Buick and Stevens-Duryea cars will be sold by the company next season.

THE GROWING GARAGE LIST.

Ed Marshall has opened a garage and repair shop at 1221 Baltimore avenue, Kansas City, Mo.

A garage building has been erected on Madison avenue, Toledo, O., by Lyman & Spitzer, and will be leased to an out-of-town concern, who will conduct a general garage and automobile repair business.

A new garage having three times the floor space of the old one will replace the Winton branch in Pittsburg, which was recently burned. The new building will have a frontage of 120 feet and a depth of 110 feet, and will cost $30,000.

The first garage in Huntsville, Ala., has been established on Holmes street by Dr. J. C. Burnam and Charles H. Fennelle. In addition to doing all kinds of motor vehicle and bicycle repair work, a full line of sundries and parts for automobiles, motorcycles and bicycles will be carried in stock.

Ground has been broken for a garage for the Allegheny Motor Vehicle Company, of Pittsburg, at 915 Irwin avenue, the heart of the residential section on the North side. The building will be 65 by 100 feet, two stories high and fireproof and will cost $12,000. G. S. Dellenbach, owner of the site, is interested in the company.

A new automobile overhauling and repair business has been opened in Boston at the rear of 48 Stanhope street. It will be conducted by D. Pattinson and H. M. Giffin, and will be known as the Pattinson Manufacturing Company. Mr. Pattinson has had many years' experience in general machine and repair work, and Mr. Giffin has been connected for a long period with leading automobile manufacturing concerns as a tester, demonstrator, and general repair man.

NEW AGENCIES ESTABLISHED.

Among the agencies recently appointed by the Wayne Automobile Company, of Detroit, are the Linscott Motor Company, of Boston; Liberty Automobile Company, Pittsburg; Walden W. Shaw Company, Chicago; Commercial Automobile and Supply Company, Washington, D. C.; J. W. Leavitt & Co., San Francisco, and the A. L. Kull Automobile Company, New York.

The Grout Brothers Automobile Company, Orange, Mass., is busily arranging its 1907 agency list. P. A. Johnston, 267 Halsey street, Newark, N. J., has doubled his agency orders for next year. Recently he drove a Grout car from Newark to Orange, Mass., and return. The Aetna Bottle & Stopper Co., which will shortly open a new garage on Peck street, Providence, has secured the Rhode Island agency, while the Brunell Auto Company, 38 Exchange street, Worcester, Mass., has secured the agency for Worcester.

Further evidence of the progressive campaign of the Corbin Motor Vehicle Corporation is shown in the recent announcement of two important agency appointments. H. J. Koehler Sporting Goods Company, of Newark, N. J., is the first of these; Mr. Koehler is well-known in automobile racing circles, and maintains a large garage business. He has obtained the agency for Essex County and middle New Jersey. The other appointment is Henry A. Rowan, Jr., & Co., of Philadelphia, the well-known proprietors of the Aldine Garage.

PERSONAL TRADE MENTION.

J. B. Hawley, formerly with Bruce & Johnson, has opened an office at 5 East Forty-second street, New York, where he is handling advertising and publicity accounts for technical concerns.

P. R. Renton, of the Renton & Williams Motor Car Company, Los Angeles, Cal., has been in New York attending the show. The company has the agency for the Great-Smith car, made in Topeka, and is shortly to open a new garage and salesroom.

R. L. Alcutt, who has for the past three years acted as assistant manager for the Knox Automobile Company, of New York, has been appointed general manager of the Knox Automobile Company, of Illinois (Inc.), and will assume his new duties on December 17.

J. J. Evans has just assumed the management of the New York showrooms of the Daimler Manufacturing Company, of Long Island City, which are situated at 1777 Broadway, and will in future devote himself to the interests of the American Mercedes cars. A de luxe edition of the catalogue covering the 1907 model has just been issued and will be mailed upon request.

E. P. Moriarty, of E. P. Moriarty & Co., Kansas City, Mo., has returned home after an extended trip on the Continent and England, where he inspected foreign cars. "The big thing in England is not speed nor power," he says, "but 'upkeep.' Everywhere you hear them talk it. Cars are sold more on that showing than for anything else. It may be because the Britisher is more careful when figuring the cost."

Fred P. Brand, sales manager of the Autocar Company, Ardmore, Pa., is making an extensive western trip, covering Chicago, Denver, Salt Lake City, Los Angeles, San Francisco, Portland and Seattle. Prominent Autocar dealers are established at each of these points, and Mr. Brand, after ascertaining local conditions, will confer with the dealers as to the best means of handling the rapidly increasing business of their territories.

C. W. Kelsey, sales manager of the Maxwell-Briscoe Motor Company, sailed Saturday last for Europe on the steamship St. Paul. Mr. Kelsey will inspect the Paris show and will visit a number of factories abroad, although the trip is as much for a rest and relaxation as for business. Mr. Kelsey will be accompanied on his trip abroad by Mr. Lucius Tyler, of Boston, a brother of the head of the Maxwell-Briscoe Boston Company.

George C. John, general sales manager for the St. Louis Car Company, St. Louis, Mo., left for St. Louis December 9 for the purpose of placing on the market in the near future a specially constructed motor to be used on railroads throughout the west. Many orders have been placed for the three models which at present are made exclusively. The old Winton quarters at 1706-18 Broadway will be occupied by the American Mors early this week.

C. E. Knoblach has returned from a four months' tour of Italy, Austria, Spain and Germany in his 40-45-horsepower Columbia, and had a most interesting trip. His car was piloted by Phil Adams, a driver of long experience.